2nd International Congress of Educational Sciences and Linguists (ICEL 2023)

20-21 July 2023

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PROCEEDINGS BOOK

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PROCEEDINGS BOOK

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With **11 papers-15 academics/researchers (Türkiye:4-Indonesia: 1-Pakistan: 2-Azarbaijan:3-Ukraine: 1)** from **10** institutions and **5** countries + (**5** countries-chair & keynote speakers & moderators)

Total Participant: 1 Chair + 5 Keynote Speakers+ 2 Moderator +15 academics/researchers: 23
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The congress was organized according to Turkey time. To calculate the time for your country:
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20 July 2023 Thursday **09:50-10:00**	**2st International Congress of Educational Sciences and Linguists (ICEL 2023)** **July 20-21, 2023 Warsaw/POLAND** **20 July 2023 10:00 a.m. Istanbul** **Zoom Meeting** **Topic**: ICEL 2023 20.07.2023 **Join Zoom Meeting** https://us06web.zoom.us/j/87662095062?pwd=MWF1TklOSTJXRkNkZkJCSmttd1dMZz09 **Meeting ID**: 876 6209 5062 **Passcode**: 251168
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20-21 July 2023 **Thursday-Friday** **10:00-12:00**	**Keynote Speakers** Dr. Monica Mastrantonio/UK Dr. Hemant Kumar Gianey/India Dr. Muhammad Zia ur Rehman/Pakistan Dr. AhdiHassan, Amsterdam/Netherlands Lecturer Olga Ipatova/Belarus
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12:00-13:00	Coffee Break- Lunch
13:30-16:30	Online Sessions
21 July 2023 **Friday 10:00-13:30**	Online Sessions **2st International Congress of Educational Sciences and Linguists (ICEL 2023)** **July 20-21, 2023 Warsaw/POLAND** **Time: July 21, 2023 10:00 AM Istanbul** **Topic**: ICEL 2023 21.07.2023 **Join Zoom Meeting** https://us06web.zoom.us/j/85952959654?pwd=QUtjQk5sQnNva2JTaFVjanJOQmovUT09 Meeting ID: 859 5295 9654 Passcode: 636610
21 July 2023 **Friday 13:30-14:00**	Closing Session

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Room-I	20 July 2023 Thursday	Moderator
	13:30-16:30	Riszky Amelia
Room-II	**21 July 2023 Friday**	**Moderator**
	10:00-13:30	Tunjung Wijanarka

Thursday, 20 July 2023 Room I

Room-I	**Thursday, 20 July 13:30-16:30**	**Moderator**	**Riszky Amelia**

1. **Emil Raul oğlu Ağayev-**Methodology of teaching Azerbaijani art in the 7th class fine arts textbook/ Azerbaijan
2. **Prof. Dr. Muhammad Yaqoob, Dr. Muhammad Zia ur Rehman, Mrs. Maria Zia-**The Impact of Education on Communication Competencies – Analysing the Paradigms/ Pakistan
3. **Prof. Dr., Hikmat Hasanov & Ph.D., Ismayil Zeynalov-**Development of a radioactive precipitation monitoring system based on wireless technology training/Azerbaijan
4. **Assoc. Prof. Sevinj Aghayeva-**Literary Language Issues in the Environment of Eastern Anatolia (Based on the Creativity of Yusif Maddah) /Azerbaijan
5. **Dr. Ijaz Yusuf, Dr. Hasan Murad**-Artificial Intelligence: A Winning Strategy in Supply Chain Education/Pakistan

Friday, 21 July 2023

Friday, 21 July 2023 Room-II

Room-II	21 July 2023	Moderator
	10:00-13:30	Tunjung Wijanarka

Friday, 21 July 2023: Room-II

Room-II	**Friday, 21 July 2023 10:00-13:30**	**Moderator**	Novriest Umbu WALANGARA

1. **Prof. Dr. Halil Ekşi & Cemile Erik-** Difficulties in Emotion Regulation Scale-8: Adaptation to Turkish/Türkiye
2. **Prof. Dr. Halil Ekşi & Neslihan Turan-**Independent-Interdependent Problem-Solving Style Scale: Adaptation tTurkish/Türkiye
3. **Assist. Prof. Neslihan Günaydın Albay-**A Poststructuralist Analysis of David Henry Hwang's "M. Butterfly"/Türkiye
4. **Smetanska M., PhD., Makovii M., PhD., Zhovnir O., PhD. -** Mechanisms of management of self-educational process of foreign students at technical university: from the experience of the Kyiv National University of Construction and Architecture-Kyiv National University of Construction and Architecture/ Ukraine
5. **PhD., Imron Wakhid, Harits-**Constructivism on Madura's Children Tales/Trunojoyo University, Indonesia
6. **Dr. Özlem Karaağaç Tuna-** EFL Learners' Translanguaging Processes While Getting Prepared for Their Speaking Tasks in Language Classes/Türkiye

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Methodology of Teaching Azerbaijani Art in the 7th Class Fine Arts Textbook

Emil Raul oğlu Ağayev

Teacher of the subject combination commission "Art and physical education" of the Azerbaijan State Pedagogical College under the Azerbaijan State Pedagogical University

ORCID ID: 0000-0001-9354-0839

ÖZET

Orta məktəblərdə təsviri incəsənət fənninin tədrisində Azərbaycan incəsənətinin öyrədilməsi metodikası şagirdlərdə ölkəmizin tanınmış sənətkarlarının, memarlıq məktəblərinin fərdi xüsusiyyətləri haqqında mühüm biliklər öyrədilir. Bu məqalədə VII sinif təsviri incəsənət dərsliyində mühüm yer tutan nəzəri məlumatlar, illüstrasiyalar, mövzunun şagirdlərə təqdim edilməsi əsas tədqiqat obyekti kimi araşdırılmışdır.

Açar sözlər:Təsviri incəsənət, dərslik, orta məktəb, Azərbaycan, rəssamlar.

ABSTRACT

In the teaching of fine arts in high school, the methodology of teaching Azerbaijani art teaches students important knowledge about the individual characteristics of well-known artists and architectural schools of our country. In this article, the theoretical information, illustrations, and presentation of the topic to the students, which occupy an important place in the VII class fine arts textbook, were examined as the main research object.

Keywords: Fine arts, textbook, high school, Azerbaijan, painters.

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Introduction

In the teaching of fine arts in secondary schools, the methodology of teaching Azerbaijani art teaches students important knowledge about the individual characteristics of well-known artists and architectural schools of our country. In the textbook of the subject, important theoretical information and illustrations explain the subject to the students.

The Interpretation of the Main Material

In the 7th class fine art textbook, the students are presented with the masterpieces of the Aran, Shirvan-Absheron, Nakhchivan and Tabriz architectural schools on the topic "Azerbaijan's architectural schools". Many architectural buildings built by artists of the Aran school of architecture in Ganja, Barda, Shamkir, Balaken and other cities were destroyed by earthquakes or wars. Constructions made of local limestone and vegetable ornaments carved from stone are more typical for the Shirvan-Absheron school of architecture. The monuments of the Nakhchivan school of architecture are distinguished by the wealth of precise geometric elements and ornamental compositions made of bricks. Due to the transfer of the capital to Tabriz in the 13th century, this city becomes an important architectural center. The opulence, variety of decoration, composition perfection, motifs and artistic style aspects of the forms characteristic of the Tabriz school of architecture attract special attention.

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Fig 1. Khudaveng monastery complex. VI-VII centuries. Kalbajar

Fig 2. Blue mosque, Tabriz. 1465

In secondary schools, fine art textbooks also provide extensive information about miniature painters. The works, styles and techniques of Muzaffar Ali, one of the brightest representatives of the Tabriz miniature school, are presented in a special table.

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Fig. 3. Muzaffar Ali "Young prince with flowers"

On the topic of "Legendary images in fine art", the works of the people's artist Rasim Babayev have been analyzed. In 1960, he was offered to draw illustrations for the fairy tale book "Dwarf", which is very popular in Azerbaijan. It is here that he begins to draw giants for the first time, depicting a terrifying, hairy giant who likes to eat children. After that, the giant becomes a symbol of his works.

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Fig. 4. Rasim Babayev "Refugees' houses"

In the 7th class fine art textbook, the individual characteristics, styles and techniques of the work of the Azerbaijani national artist Mirali Mirgasimov are presented to the students on the topic "Human image in sculpture".

Fig 5. M. Mirgasimov "Jafar Jabbarli"

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If we pay attention to the theme of "life immortalized in patterns", the carpet-portraits of the well-known decorative-applied art artist Kamil Aliyev are analyzed, and most importantly, these images are works that can reveal the essence of the image, its inner world and greatness with great skill. The main service of the artist Kamil Aliyev is to apply the realistic portrait genre to the classical art of carpet weaving. He very skillfully incorporated the portrait image into the decorative arrangement of carpet compositions through classical ornamental styles, creating a compositional harmony between them.

Fig 6. K. Aliyev "Imadedin Nasimi"

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Conclusion

The main results of the scientific article "Methodology of teaching Azerbaijani art in the 7th class fine arts textbook" were as follows:

- The work of Azerbaijani artists and architectural monuments are analyzed in the textbook

-If we pay attention to the topics in the textbook, the development of aesthetic response in students is kept in the center of special attention.

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Development of a Radioactive Precipitation Monitoring System Based on Wireless Technology Training

H.G. Hasanov[1], I.M. Zeynalov [2]
[2] Ministry of Science and Education of Azerbaijan Republic Institute of Geography named after academician H. Aliyev

Abstract

Disadvantages of existing monitoring system are critically analyzed. It is discussed, when monitoring systems can bring failures to radiological measuring process. It is considered how to get the best performance for working monitoring system by using wireless technologies. Two types of wireless technologies are suggested to use for developing new generation of monitoring system, namely internet of things (IoT) and wireless electric power transfer (WPT) through satellites.

Keywords: monitoring system, radioactive precipitation, measuring sensor, wireless technologies.

1 Introduction

The purpose of radioactive precipitations (RP) monitoring is observation and controlling radiological situation of territory under research to get the basic information for the territory estimation and prognosis. Matter of the radioactive precipitation monitoring system (RPMS) is direct and regular observation and field measurements (or, measurements in-vivo), which are carried out on territory of some locality to extract information about radiological characteristics of environment. Using data of RPMS gives an opportunity to reveal the laws of the locality radiological situation changes. This information is required to make a conclusion about radiological status-quo of: a) people in the locality, b) nature, and c) animals. The last two factors form a food security and the radiological ID, which lead to making a decision for concrete radiological situation.

Above-mentioned tasks of RPMS are resolved, as a rule, by three main technical components:

- Out-door terminals of radiological control located in fixed geographical locations, which periodically, accordingly to the technical requirements, make measurements;

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- Observation (or controlling) network for environment components, which contains equipment's for receiving, treatment and transfer of information as well as antenna equipment and UPS; and
- Mobile terminals of radiological control, which are used for making measurements in randomly selected points.

For example, one can provide some data for existing RPMS. On territory of the Republic of Belarus in 2020, there are 76 our-door terminals for radiological monitoring of atmosphere [1], which have been distributed as:

- 41 observation terminals for daily measuring power of γ - radiations;
- 25 observation terminals for measuring precipitations from atmosphere onto the Earth's surface (the samples have been selected daily by using horizontal tablets at 7 terminals located in areas close to Atomic Power Plants (APP), and once in 10 days at remaining 18 terminals);
- 10 observation terminals, which have been located in 10 different sites scheduled for measuring radioactive aerosols at near-Earth surface atmosphere (the samples have been selected daily at 9 terminals and once in 10 days at remaining terminal in city Mogilev).

For operative revealing disasters and dangerous situations, daily samples of atmosphere selected from areas near active APP-s have been subjected to analysis for finding short lived radionuclides, especially the isotope iodine-131 (half-life is equal to 8 days; this isotope is estimated to play significant role in nuclear fusions and have very dangerous effect on living organisms). All these terminals were fixed at geographic locations and used for determining tendencies in radioactive fallouts behavior from both local reasons (within country), and exogenous ones (neighboring and remote countries).

It is obvious that for all above-mentioned technical components of RPMS energy and communication facilities are necessary. By this reason, in modern RPMS most of devices and instruments are maintained by back-up source of electricity for uninterrupted work. Only in this case one can talk about completely equipped RPMS.

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2 Disadvantages of existing RPMS

The main problem of existing RPMS is based on the fact, that observations in-vivo should be carried out permanently for a long time. Because, namely while long-time and permanent measurements the fluctuations of RP on given territory can be cleared as well as the changing tendencies and their reasons may be determined. For example, in paper [2], radioactive pollutions of river Syrdarya have been studied and it is shown that season fluctuations of the pollutions can vary by amplitudes 7-8 times (see Figure 1). This experimental fact approves an idea that radioactive precipitations measuring on tested territory whole a year is justified.

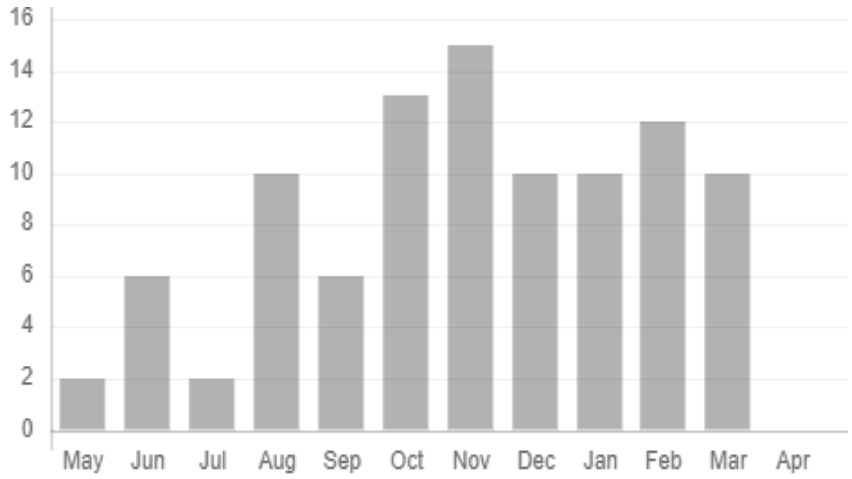

Figure 1. Season fluctuations of radioactive pollutions in Syrdarya river basin [2]. Values by ordinates are measured in Becquerel/liter (Bq/L).

The second circumstance, which may strongly affect working RPMS is, testing areas are often placed very far from each other. This leads to great time losses and expenses for making real measurements. For example, in paper [3], authors note that distance between observation terminals may exceed 30 km. There is one more reason for many expenses due to functioning existing RPMS. Any detector and/or sensor, which is the physical base of measuring process, has strictly regulated time interval for energy supply. In other words, detector or sensor will precisely measure the RP level only while the service time of battery (and/or, any other energy source). So, it is logically concluded

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that any RPMS will be valuable only for period indicated in technical specifications for electric energy sources. If battery of detector (or sensor) is running low, then any RPMS loses functionality as a whole. This failure may be partial or full in dependence upon: a) design peculiarities of RPMS, and b) the role of concrete detector or sensor in the RPMS hierarchy. Due to this reason, for maintaining the full functionality of RPMS it is necessary to periodically making check-up and substitute energy sources independently on, where these sources are embedded into RPMS. This, in turn, means the multiply costs and such an exploitation parameters as man working time, sources prices, transportation expenses and so on.

In case, when for making measurements in terms of RPMS it is necessary to use mobile terminals of radiological control, problem of energy supply also becomes important. Obviously, any mobile terminal for radiological measurements as well as measuring robot, manipulator etc., should be supplied by energy. Moreover, this energy is needed for both mechanical moving, and making measurements. And, in urgent cases, when disasters happen and there is necessity to making measurements in occasional and randomly selected locations, problem of energy supply looks absolutely different. Because, one needs to deliver energy in randomly selected geographical location.

In addition, it is worthwhile to underline some technical specifications of working RPMS in field conditions. Electric batteries loss their nominal technical characteristics due to low, or vice versa, high temperatures of environment (thermal discharging), humidity and raining/snowing (oxidation, coating rust) and so on.

Hence, we may conclude that developing RPMS means making observation and measurements by time and geographic location, but full functioning RPMS is possible when all above mentioned components of RPMS are permanently supplied by electric energy. As it follows from critical analysis of working RPMS, the most important criteria for advanced RPMS-s are their ability to work:

- 24 hours and uninterrupted functioning at any meteorological conditions;
- In any geographical location and remote areas when making urgent radiological measurements are necessary but specifications of relief and landscape are complicated.

Finally, we conclude that RPMS of new generation must work at

- The minimal human intervention;
- The minimal dependence upon field and meteorological conditions;

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- The maximal operational independence and self-consistency;
- In addition to above said three points, have an ability to keep their functionality and technical specifications for a long time.

Using Wireless Technologies

This purpose can be achieved by application of wireless technologies (WT), thereto these technologies, to our view, have to be classified by two categories:

1. Managerial WT and
2. Energetic WT.

In accordance with our concept for RPMS on the base of WT, managerial WT-s are of internet of things (IoT, well known technology, which is sufficiently widely used in our days, for general information see [4]), but energetic WT-s – electric power transferred wirelessly. Managerial WT-s are data transmission (in general case, any information) between physical objects, which are integrated into one hierarchical chain. RPMS is just one of typical example of this hierarchical chain. Physical and technical aspects of wireless transfer of electric power are discussed in details in recent paper of authors [5]. In this paper, authors considered advantages of wireless transfer of electric power through satellites, which are very fruitful for cases discussed in present paper, namely:

- Independent and autonomous producing electric power;
- Delivering electric power to remote locations;
- Operative supplying by electric power in case of disasters and technogenic hazards;
- Delivering electric power to mobile consumers (devices, detectors, sensors and so on)

and many others. Joint application of both WT-s indicated above will lead to developing RPMS of new generation, namely monitoring system, when:

а) the human factor is practically absent,

б) elements of the system, including observation terminals, mobile controlling facilities, terminals for information gathering and analysis etc., may be distributed on wide area,

в) devices of RPMS for their correct functioning, due to electric WT-s, may be supplied by electric power unlimitedly long time.

Remotely installed measuring devices (detectors, sensors) will transmit current information to local center for information gathering after that, the information received will be transmitted to the main

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center. All the transmitted information is analyzed, treated and generalized, finally we can develop the scheme of optimal radiological status-quo of measured geographic point, area, location and so on. This procedure allows to create the algorithm of resolving radiological force-major, if happens. All the device and centers, transmitting and receiving antennas will be supplied by electric power in terms of electric WT-s.

Wireless technologies training is necessary for optimal relocation mobile radiological stations as well as in case of situational force majeure and/or risks, if such happens at the atomic plants. Now, we are working on developing the algorithm for training optimization.

Conclusion

The purpose of current paper is to substantiate a possibility to develop principally new generation of RPMS, when all the managerial and measuring operations can be done by means of WT-s by minimizing the human factor. For implementing this type of RPMS, it is proposed to integrate in monitoring system WT-s as they have been classified above. It is understandable, that many questions are not described herein in detail, and discussed only qualitatively.

RPMS of new generation developed on the base of two WT-s, a) management and b) electric supply, will be more technological, as a result, more effective, less subjected by exogenous factors, and of course low cost. Theoretically, development of RPMS of new generation, as it proposed in this paper, gives an opportunity to build the unified global monitoring system, which could be responsible for radiological situation of air, water, soil and other segments of environment. Such a system will lead to the absolutely new managerial and implementation level of radiological security.

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DUYGU DÜZENLEME GÜÇLÜĞÜ ÖLÇEĞİ-8: TÜRKÇE UYARLANMASI

Halil EKŞİ[1] & Cemile ERİK[2]

Marmara University, Institute of Educational Sciences, İstanbul/TÜRKİYE
[1] https://orcid.org/0000-0001-7520-4559
[2] https://orcid.org/0009-0006-7958-2315

Özet

Bu çalışmanın amacı Penner, Steinberg ve Sharp (2022) tarafından geliştirilen Duygu Düzenleme Güçlüğü Ölçeği-8'i Türkçe' ye uyarlamaktır. Duygu düzenleme güçlüğünü daha az madde ile açıklayan ölçek toplam 8 madde ve dört alt boyuttan oluşurken alt boyutlar; amaç, dürtü, kabullenmeme ve stratejidir. Çalışma 18-57 yaş aralığında- *($\bar{x}$ = 25.68)* 282'si (%76.8) kadın ve 85'i (%23.2) erkek olmak üzere toplam 367 yetişkine uygun örnekleme yöntemi kullanılarak uygulanmıştır. Ölçek için gereken izinler alındıktan sonra ölçeğin Türkçeye çevrilmesi için çeviri-tekrar çeviri yöntemi kullanılmıştır. Ölçeğin pilot çalışmasından sonra ölçüt geçerliliği sağlanmıştır. Ölçüt geçerliliği için Duygu Düzenleme Güçlüğü Ölçeği-8 ve Duygu Düzenlemede Güçlükler Ölçeği (Rugancı ve Gençöz, 2011), 61 katılımcıya Google form aracılığıyla uygulanmıştır. Duygu Düzenleme Güçlüğü Ölçeği-8 ile Duygu Düzenlemede Güçlükler Ölçeği (Rugancı ve Gençöz, 2011), arasında pozitif yönde manidar bir ilişki bulunarak ölçüt geçerliliği sağlanmıştır (r=.804, p<.01). Ölçeğin tamamı için iç tutarlılık değeri α =0.87 olarak bulunurken alt boyutların iç tutarlılık değeri 0.68 ve 0.77 arasında değişmektedir. Yapı geçerliliği için yapılan doğrulayıcı faktör analizi sonucunda uyum iyiliği indeksi değerlerinin kabul edilebilir düzeyde olduğu bulunmuştur. Araştırma bulguları doğrultusunda Duygu Düzenleme Güçlüğü Ölçeği-8'in ülkemizde yetişkin bireylerin duygu düzenlemede yaşadıkları güçlükleri daha kısa sürede belirlemede güvenilir ve geçerli bir yapıya sahip olduğu görülmektedir.

Anahtar Kelimeler: duygu düzenleme güçlükleri, geçerlik, güvenirlik, ölçek, uyarlama

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DIFFICULTIES IN EMOTION REGULATION SCALE-8[1]

Abstract

The purpose of this study is to adapt the Difficulties in Emotion Regulation Scale-8 (DERS-8), developed by Penner, Steinberg, and Sharp (2022), into Turkish. The scale, which describes difficulties in emotion regulation with fewer items, consists of a total of 8 items and four structures; the structures included in the scale are goals, impulses, non-acceptance, and strategies. A total of 367 adults, aged between 18- 57 (M = 25.68), out of which 282 (76.8%) were female and 85 (23.2%) were male, using a convenient sampling method. After obtaining the necessary permissions for the scale, the translation-back-translation method was used for its translation into Turkish. After the pilot study of the scale, criterion validity was ensured. For criterion validity, the Difficulties in Emotion Regulation Scale-8 and the Difficulties in Emotion Regulation Scale were administered to 61 participants via Google Forms. Criterion validity was established by finding a positive and significant relationship between the Difficulties in Emotion Regulation Scale (Rugancı and Gençöz, 2011) and the Difficulties in Emotion Regulation Scale-8 ($r = 0.804$, $p < 0.01$). The overall internal consistency value for the scale was found to be $\alpha = 0.87$, while the internal consistency values for the subscales ranged from 0.68 to 0.77. The results of the confirmatory factor analysis indicated that the goodness-of-fit index values for structural validity were at an acceptable level. In line with the research findings, it is seen that the Difficulties in Emotion Regulation Scale-8 has a reliable and valid structure in determining the difficulties of adult individuals in our country in emotion regulation in a shorter time.

Keywords: difficulties in emotion regulation, validity, reliability, scale, adaptation

[1] Bu makale ile ilgili iletişim için Cemile ERİK, Eğitim Bilimleri Enstitüsü, Marmara Üniversitesine başvurunuz.
E- posta: cemileerik87@gmail.com

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Giriş

Duygu düzenleme bireyin hissettiği duyguyu, ne zaman ve nasıl deneyimlediğini ve nasıl ifade ettiğini belirleyen beceridir (Gross, 1998a). Thompson (1994)'a göre duygu düzenleme bireyin hedeflerine ulaşmak için duygusal tepkilerini değerlendirmek ve değiştirmekten sorumlu dışsal ve içsel özellikleridir. Gratz ve Roemer (2004) duygu düzenlemeyi kavramsal ve ampirik çalışmalara dayandırarak; duyguları anlama ve fark etme, duyguları kabul etme, dürtüsel davranışları kontrol etmek ve olumsuz duygular yaşarken amaca uygun davranmak, bireysel hedefleri ve durumun gerektirdiklerini karşılamada duygusal tepkileri düzenleyebilmek için duruma uygun duygu düzenleme stratejilerini esnek biçimde kullanma yeteneği olarak açıklamaktadır.

Duygu düzenlemenin, son yıllarda psikoterapi alanında önemli bir konu haline gelmesiyle araştırmalarda duygu düzenlemenin farklı işlevleri ve boyutları incelenmiştir (MehdiNejad, 2020). Gratz ve Roemer (2004) duygu düzenleme ile ilgili diğer araştırmacılardan farklı olarak duygu düzenlemenin bileşenlerini kavramsallaştırarak duygu düzenleme güçlüğüne vurgu yapmaktadır. Gratz ve Roemer' a göre, duygu düzenleme bileşenlerinden herhangi birinin veya tamamının göreceli olarak yokluğunda duygu düzenleme güçlüğü ve düzensiz duygulanımın ortaya çıkmaktadır. Leahy ve arkadaşları (2011) ise duygu düzenleme güçlüğünün duygunun kendisinden kaynaklanmadığını belirterek duygu düzenleme becerisine vurgu yapmaktadır. Leahy ve arkadaşlarına (2011) göre duygu düzenlemede yaşanan güçlüğün asıl nedeni kişinin duyguyu tanımlama, kabul etme, kullanma ve duygunun varlığına rağmen işlevselliğini sürdürebilme konusunda beceri eksikliğinin olmasıdır.

Duygu düzenleme güçlükleri bireyin olumsuz duyguyla başa çıkmasını ve psikolojik dayanıklılığını olumsuz etkileyerek bireyin işlevselliğine zarar vermektedir. Cole ve Michel (1994) duygu düzenleme güçlüklerinin psikolojik bozuklukların oluşumunda, sürekliliğinde ve tedavisinde etkili olabileceğini vurgulamıştır. Duygu düzenleme güçlüklerinin psikolojik sağlamlılık açısından önem taşıması literatürde duygu düzenleme güçlüğüyle ilişkili faktörleri anlamak için çok sayıda araştırma yapılmasını sağlamıştır. Yurtiçinde yapılan çalışmalarda

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duygu düzenleme güçlüğü ile algılanan ebeveyn tutumları ve duygusal deneyimler (Safrancı, 2015), bilinçli farkındalık (Gündüz, 2016), kişilerarası ilişkiler ve kaygının bağlanma stilleri (Sarıbal, 2017), sosyal kaygı (Aydın, 2018), yeme bozukluğu riski (Kılıç, 2019), bilişsel esneklik (Yıldız, 2018), depresyon, anksiyete ve stres (Abdi ve Pak, 2019), depresyon ve anksiyete (Gülmez, 2019) psikolojik belirtiler (Yumuşak, 2019), duygusal yeme ve tıkanırcasına yeme bozukluğu (Kılıç, 2020), sosyal ve duygusal yalnızlık (Yüksel ve Saruhan 2021), intihar eğilimi ve algılanan sosyal destek (Demir ve Sümer, 2022) arasında ilişki bulunmuştur. Yurt içinde yapılan araştırmalar incelendiğinde duygu düzenleme güçlükleri ile psikolojik belirtiler arasında pozitif yönde ilişkili bulunmaktadır (Karıncalı, 2021).

Ülkemizde duygu düzenleme güçlüklerini ölçmek için yaygın olarak kullanılan ölçekler bulunmaktadır. Gratz ve Roemer (2004) duygu düzenleme güçlüğünün klinik alandaki önemine ve yetişkinler için sınırlı sayıda yapılan çalışmalara vurgu yaparak duygu düzenleme güçlüğü bileşenlerini saptamak amacıyla 36 maddeden ve 6 faktörden oluşan Duygu Düzenlemede Güçlükler Ölçeğini geliştirmiştir. Ölçek Rugancı ve Gençöz (2011) tarafından Duygu Düzenlemede Güçlükler Ölçeği olarak Türkçe'ye uyarlanmıştır. Ölçek duygu düzenleme güçlükleri ile ilgili duygusal tepkilerin farkında olmama (farkındalık); duygusal tepkilerin net olmaması (netlik); duygusal tepkileri kabul etmeme (kabul etmeme); etkili stratejilere sınırlı erişim (stratejiler); olumsuz etki yaşandığında dürtüsel davranışı kontrol etmede zorluklar (dürtü); ve olumsuz etki yaşandığında hedefe yönelik davranışta bulunmada zorluklar (amaçlar) boyutlarını ölçmektedir.

Gratz ve Roemer (2004) tarafından geliştirilen Duygu Düzenlemede Güçlükler Ölçeğinin kısa formu olan Duygu Düzenleme Güçlüğü Ölçeği-Kısa Formu Bjureberg ve arkadaşları (2016) tarafından geliştirilmiştir. Bjureberg ve arkadaşları (2016) tarafından geliştirilen Duygu Düzenleme Güçlüğü Ölçeği-Kısa Formu (DDGÖ-16) Türkçeye Yiğit ve Guzey Yiğit (2017) tarafından uyarlanmıştır. Duygu Düzenleme Güçlüğü Ölçeği-Kısa Formu netlik, amaçlar, dürtü, stratejiler ve kabul etmeme olmak üzere 5 alt faktörden oluşmaktadır. Ölçek toplamda 1 (hemen hemen hiç) ile 5 (hemen hemen her zaman) arasında derecelendirilen

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Likert tipli 16 maddeden oluşmaktadır. Ölçeğin değerlendirmesinde yüksek puan duygu düzenleme güçlüğü belirti düzeyinin yüksekliğini göstermektedir.

Duygu düzenleme güçlükleri üzerine Türkiye'de ölçek çalışmaları bulunsa da bu çalışmalarda duygu düzenleme güçlüğünü tek bağlam içerisinde ele alan ölçekler bulunmamaktadır. Bu nedenle duygu düzenleme güçlüğünü tek bağlamda açıklayacak ölçek çalışmalarına ihtiyaç duyulmaktadır. Bu çalışmada duygu düzenleme güçlüğünü tek bağlamda ve daha az madde ile açıklamak için İngilizcede geliştirilmiş olan Duygu Düzenleme Güçlüğü Ölçeği-8'in (Steinberg vd., 2022) Türkçeye uyarlanarak geçerlilik güvenilirlik değerlendirilmesinin yapılması amaçlanmıştır.

Yöntem

Çalışma Grubu

Araştırmaya 18-57 yaş aralığında *($\bar{x}$ = 25.68)* toplam 367 yetişkin katılmıştır. Araştırmaya katılanların %76.8'i kadın (n = 282) ve %23.2'si erkeklerden (n = 85) oluşmaktadır. Örneklem seçim yöntemi olarak uygun örnekleme yöntemi kullanılmıştır. Ölçüt geçerliliği için 61 öğrenciye Türkçe'ye uyarlanmış olan Duygu Düzenlemede Güçlükler Ölçeği (Rugancı ve Gençöz, 2011) uygulanmıştır. Veriler Google Form aracılığıyla online olarak toplanmıştır ve ölçeğin doldurulması ortalama beş dakika sürmektedir.

Veri Toplama Araçları

Duygu Düzenleme Güçlüğü Ölçeği-8

Steinberg ve arkadaşları (2022) tarafından geliştirilen ölçek 8 maddeden oluşmaktadır. DDGÖ-8 duygu düzenleme gerektiren durumlara odaklanmayı sağlayan tek tip bir bağlam sunmak amacıyla yalnızca "***Kendimi sıkıntılı/kötü hissettiğimde*** " ifadesiyle başlayan maddeleri içermektedir. Ölçek duygusal tepkileri kabul etmeme (kabul etmeme); etkili stratejilere sınırlı erişim (stratejiler); olumsuz etki yaşandığında dürtüsel davranışı kontrol etmede zorluklar (dürtü); ve olumsuz etki yaşandığında hedefe yönelik davranışta bulunmada zorluklar (amaçlar) olmak üzere 4 alt boyuttan ve her alt boyutta 2 maddenin olduğu toplam 8

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maddeden oluşmaktadır. 5'li likert tipi olan ölçekte maddeler (1= Hemen hemen hiç (%0-10), 2= Bazen (%11-35), 3= Yaklaşık yarı yarıya (%36-65), 4= Çoğu zaman (%66-90), 5= Hemen hemen her zaman (%91-100) bireyin duygu düzenlemede yaşadığı güçlüklere dair zaman ifadeleriyle birlikte cevaplandırılmaktadır. Ölçekten alınabilecek en düşük puan 8 iken en yüksek puan 40'tır ve ölçekten alınan puan arttıkça bireyin duygu düzenlemede yaşadığı güçlükte artmaktadır.

Duygu Düzenleme Güçlüğü Ölçeği-8 Amerika'da 18–25 yaş aralığındaki 700 üniversite öğrencisi üzerinde uygulanarak geliştirilmiştir. Ölçeğin geliştirilme aşamasında orijinal Duygu Düzenleme Güçlüğü Ölçeğinin 36 maddesi gözden geçirilerek yalnızca "kendimi sıkıntılı/kötü hissettiğimde" ifadesiyle başlayan maddeler seçilerek madde sayısı 27'ye düşürülmüştür. Kalan 27 maddeye ilk madde tepki kuramı analizi yapılmış ve ters kodlanmış altı madde çıkarılmış, bunun neticesinde kalan farkındalık ve netlik maddelerinin çıkarılmasıyla geriye 21 madde kalmıştır. Kalan 21 maddenin 20'sinin LD madde çifti gözlemlenmiştir. Madde çiftlerinin incelenmesi ile ifade ve içerik açısından fazlalık olduğundan madde çiftlerini azaltmak ve madde içeriğini korumak için maddeler seçilmiştir. Kalan dört orijinal alt faktör için her boyuttan iki madde seçilmiş, LD üretebilecek gereksiz içerik veya anlam belirsizliği oluşturacak maddeler dikkate alınmıştır. Bu hususlara dayalı olarak maddeler çıkarıldıktan sonra DDGÖ-8, 4 alt faktör her alt faktörde 2 madde olan toplam 8 madden oluşturulmuştur.

Duygu Düzenlemede Güçlükler Ölçeği

Bu çalışmada Duygu Düzenleme Güçlüğü Ölçeği-8 için (Steinberg vd., 2022) yapılacak ölçüt geçerliliğinde Duygu Düzenlemede Güçlükler Ölçeği (Rugancı ve Gençöz, 2011) kullanılmıştır. Gratz ve Roemer (2004) tarafından geliştirilen Duygu Düzenlemede Güçlükler Ölçeği Rugancı ve Gençöz (2011) tarafından Türkçeye uyarlanmıştır. Ölçek 5'li (1= Hemen hemen hiç, 2= Bazen, 3= Yaklaşık yarı yarıya, 4= Çoğu zaman, 5= Hemen hemen her zaman) Likert tipi şeklinde 36 maddeden ve 6 faktörden oluşmaktadır. Bu faktörlerden netlik 5, farkındalık 6, dürtü 6, kabul etmeme 6, amaçlar 5, strateji 8 maddeden oluşmaktadır. Kabul

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etmeme alt faktöründe ters madde bulunmazken farkındalık boyutunun tüm maddeleri olmak üzere toplamda ölçekte 12 ters madde bulunmaktadır.

Duygu Düzenlemede Güçlükler Ölçeğinin madde korelasyonları .18 ile .71 arasında değişmektedir ve 32 maddenin madde toplam korelasyonu .35'in üzerindedir. Ölçeğin Cronbach alfa katsayısı tüm ölçek için .94 olarak hesaplanmıştır ve bu değer ölçeğin orijinal versiyonuna yakındır (Rugancı ve Gençöz, 2011). DDGÖ'nin alt ölçekleri için alfa katsayıları sırasıyla; farkındalık alt ölçekleri için .75, netlik için .82, kabul etmeme için .83, strateji için .89, amaçlar ve dürtü için .90 olarak hesaplanmıştır. DDGÖ için test-tekrar test güvenirlik katsayıları .60 ile .85 arasında değişmektedir.

İşlem

Duygu Düzenleme Güçlüğü Ölçeği-8'in Türkçe uyarlaması için ölçeği geliştiren yazarlardan Steinberg ve orijinal Duygu Düzenleme Güçlüğü Ölçeğini geliştiren yazarlardan Roemer ile iletişime geçilmiş, gerekli izinler alınmıştır. İzinlerin ardından iki dilde de yetkin olan beş uzman tarafından ölçeğin İngilizceden Türkçeye ilk çevirisi yapılmıştır. Birbirinden bağımsız yapılan beş çeviri üç kişilik panel grubu oluşturularak değerlendirilmiş ve her bir maddenin en iyi haline ortak karar verilmiştir. Oluşturulan Türkçe form önceki aşamalardan bağımsız olan 2 dil uzmanı tarafından İngilizceye geri çevrilmiştir. Elde edilen geri çeviriler orijinal maddelerle karşılaştırılarak aynı anlama gelip gelmedikleri değerlendirilmiştir. Dil anlaşılabilirliğini sağlamak için 10 kişilik gruba pilot çalışma uygulanmış ve maddelerin anlaşılabilirliğine dair geri bildirimler alınmıştır. Geri bildirimler doğrultusunda olumsuz bir dönüt ile karşılaşılmadığından ölçeğe son hali verilmiştir. Son hali verilen Türkçe ölçek maddeleri ölçüt bağımlı geçerlik çalışması kapsamında Duygu Düzenlemede Güçlükler Ölçeği ile 61 yetişkin katılımcıya Google form aracılığıyla uygulanmıştır.

Bulgular

Doğrulayıcı Faktör Analizi

Duygu düzenleme güçlüğü- 8'in geçerliği için AMOS 22 programı aracılığıyla doğrulayıcı faktör analizi yapılmıştır. Analiz sonucunda ölçeğin uyum iyiliği indeksi değerleri ($\chi 2/df=3,05$, NFI=.964, CFI=.976, TLI=.951, RMSEA=.075) kabul edilebilir düzeydedir. Ki

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kare değerinin serbestlik derecesine oranı 3,05 olarak bulunmuştur. Büyük örneklemlerde bu değerin 5'ten küçük olması orta düzeyde uyuma işaret etmektedir (Kline, 2005). NFI ve CFI uyum indeksi değerlerinin 0.95'in üzerinde olması mükemmel uyuma, 0.90'nın üzerinde olması iyi uyuma karşılık gelmektedir (Sümer, 2000). Bu çalışmada NFI ve CFI değerleri mükemmel uyum göstermektedir. RMSEA=.075 değeri ise 0.8'den küçük olduğu için iyi uyum göstermektedir (Sümer, 2000). Tablo 1'de uyum indeksi değerleri ve Şekil 1'de faktör yüklerine ait yol diyagramı sırasıyla verilmiştir.

Tablo 1

Duygu düzenleme güçlüğü- 8 için Doğrulayıcı Faktör Analizi Sonuçları

	χ2	sd	NFI	CFI	RMSEA
DDGÖ-8	42,713	14	.964	.976	.075

Not. Analiz için doğrulayıcı faktör analizi kullanılmıştır. NFI= normlaştırılmış uyum indeksi; CFI= karşılaştırmalı uyum indeksi; RMSEA= yaklaşık hataların ortalama karekökü

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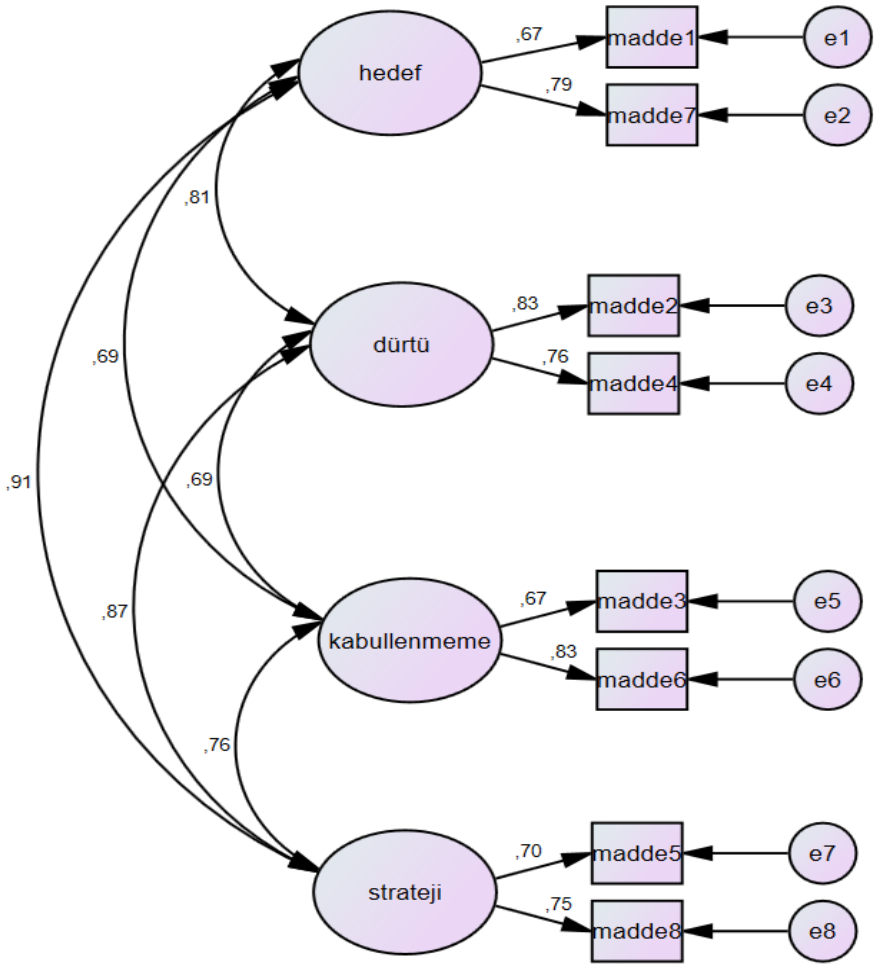
Şekil 1

Doğrulayıcı Faktör Analizine ait Yol diyagramı



Ölçüt Geçerliliği

Duygu düzenleme güçlüğü- 8'in ölçüt geçerliliği için Rugancı ve Gençöz (2011) tarafından Türkçeye uyarlanan Duygu Düzenlemede Güçlükler Ölçeği kullanılmıştır. İki ölçekte 61 katılımcıya uygulanmış, ölçeklerin toplam puanları arasındaki ilişki incelenmiştir. Tablo 2'de ölçeklere ait Pearson momentler çarpımı korelasyon katsayılarını gösteren bulgular yer almaktadır. Uyarlaması yapılan Duygu düzenleme güçlüğü- 8 ve uyarlanan Duygu

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Düzenlemede Güçlükler Ölçeği arasında pozitif yönde manidar bir ilişki bulunmuştur (r=.804, p<.01).

Tablo 2

Duygu Düzenleme Güçlüğü Ölçekleri Arasındaki Korelasyon

Ölçek	X	SS	1	2
1. DDGÖ-8	18.33	7.04	-	.80*
2. DDGÖ	84.44	22.49	.80*	-

*p<0.01

Güvenirlik

Duygu düzenleme güçlüğü- 8'in güvenirliği için SPSS 26 programı aracılığıyla Cronbach Alpha analizi yapılarak iç tutarlılık değeri hesaplanmıştır. İç tutarlılık kat sayısının 0.60 ile 0.70 arasında olması kabul edilebilir düzeyde güvenirliği, 0.80 veya daha üst bir değer ise yüksek düzeyde güvenilirliği göstermektedir (Ursachi, Horodnic, & Zait, 2015). Ölçeğin tamamına ait güvenirlik bulguları Tablo 3'te sunulmuştur.

Tablo 3

Duygu Düzenleme Güçlüğü Ölçeği- 8 için Cronbach Alpha İç Tutarlılık Katsayıları

Alt boyutlar	X	SS	Cronbach α
Dürtü	4.82	1.96	0.77
Kabullenmeme	4.58	2.20	0.71
Amaç	6.10	2.10	0.69
Strateji	5.0	2.04	0.68
Toplam	20.50	6.38	0.87

Ölçeğin tamamı için Cronbach Alpha değeri α =0.87 bulunmuştur. Ölçeğin dürtü alt boyutunun güvenirliği α =0.77, kabullenmeme alt boyutunun güvenirliği α = 0.71, amaç alt boyutunun güvenirliği α =0.69 ve strateji alt boyutunun güvenirliği α =0.68 olarak hesaplanmıştır. Duygu düzenleme güçlüğü ölçeği 8,'in tamamı için iç tutarlılık değerinin 0.87 olması yüksek düzeyde güvenirliği sağladığını göstermektedir.

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Madde Analizi

Duygu düzenleme güçlüğü- 8'in madde analizi için puan dağılımının %27 alt grup ile %27 üst grupları arasındaki madde ayırt edicilik değerlerine bakılmıştır. Madde ayırt edicilik indeksi için Bağımsız örneklem t- Testinden faydalanılmıştır. Bu analize göre gruplar arasında istendik yönde ve anlamlı farklılıkların çıkması iç tutarlılığı göstermektedir. Madde ayırt edicilik indeksi için en düşük toplam puan değerine sahip olan 99 kişiden alt grup, en yüksek toplam puana sahip olan 99 kişiden de üst grup oluşturulmuştur. Her madde için üst ve alt grup arasındaki ayırt edicilik bulgularının yer aldığı Tablo 4 incelendiğinde t-Test değerlerinin istatiksel olarak anlamlı çıktığı ve ölçekte yer alan tüm maddelerin duygu düzenleme güçlüğü yaşayan ve yaşamayan bireyleri anlamlı derecede ayırt ettiği görünmektedir.

Tablo 4

%27'lik Alt ve Üst Grup Farkına İlişkin Bağımsız t Testi Sonuçları

Maddeler	Üst Grup		Alt Grup		t (196)	p
	X	SS	X	SS		
Madde 1	4.07	.92	2.07	.89	15.43	.000
Madde 2	3.64	.85	1.45	.57	21.12	.000
Madde 3	3.19	1.26	1.32	.55	13.46	.000
Madde 4	3.33	1.00	1.46	.55	16.22	.000
Madde 5	3.47	1.17	1.36	.61	15.87	.000
Madde 6	3.77	1.11	1.32	.49	19.97	.000
Madde 7	4.13	.86	1.82	.70	20.62	.000
Madde 8	3.87	.88	1.80	.74	17.83	.000

Madde- toplam korelasyonu test maddelerinden alınan puanlar ile testin toplamından alınan puan arasındaki ilişkiyi açıklamaktadır. Madde- toplam korelasyonun pozitif yönde ve yüksek olması test maddelerinin benzer davranışları ölçtüğünü ve bu nedenle iç tutarlık değerinin yüksek olduğunu göstermektedir.

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Tablo 5
Duygu Düzenleme Güçlüğü Ölçeği- 8 için Düzeltilmiş Madde Toplam Korelasyonları

Maddeler	X	SS	DMTTK
Madde 1	3.13	1.18	.56
Madde 2	2.48	1.13	.70
Madde 3	2.14	1.19	.52
Madde 4	2.34	1.04	.65
Madde 5	2.25	1.18	.63
Madde 6	2.44	1.30	.63
Madde 7	2.97	1.22	.66
Madde 8	2.75	1.14	.66

Not. DMTTK = düzeltilmiş madde toplam test korelasyonu

Madde- toplam korelasyonunun .30 ve daha üstü değerde olan maddeler bireyleri iyi derecede ayırt etmektedir (Büyüköztürk, 2020). Tablo 5'te görüldüğü gibi duygu düzenleme güçlüğü ölçeği- 8 için madde toplam korelasyonları .52 ile .70 arasında değişmektedir. Bu değerler ölçek maddelerinin benzer davranışları ölçtüğünü, iyi bir iç tutarlılık değerine ve ayırt ediciliğe sahip olduğunu göstermektedir.

Tartışma

Bu çalışmanın amacı Penner, Steinberg ve Sharp (2022) tarafından kısaltılan Duygu Düzenleme Güçlüğü Ölçeği- 8'i Türkçe' ye uyarlamak ve psikometrik özelliklerini araştırmaktır. Bu amaç doğrultusunda gerekli izinler alındıktan sonra dil eş değerliği sağlanmıştır. Dil eşdeğerliği için Türkçe ve İngilizceye hâkim olan beş uzman tarafından birbirlerinden bağımsız olacak şekilde ölçeğin ilk çevirisi yapılmıştır. Çevirinin ardından oluşturulan 3 kişilik panel grubu ile her bir maddenin en iyi çevirisine karar verilmiştir. Oluşturulan Türkçe form, 2 uzman tarafından tekrar İngilizceye çevrilmiştir. Geri çeviri ve orijinal ölçek maddeleri karşılaştırılmış, ölçek Türkçe dil uzmanı tarafından inceledikten sonra ölçeğin pilot çalışması yapılmıştır. 10 kişilik gruba dil anlaşılabilirliği için pilot çalışma yapılarak geri dönütler alınmıştır. Dil geçerliliği sağlandıktan sonra yapı geçerliliği için doğrulayıcı faktör analizi kullanılmıştır.

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Duygu düzenleme güçlüğü ölçeği- 8 için faktör yükleri .67 ve .83 arasında değişmektedir. DDGÖ-8'in doğrulayıcı faktör analizi sonucunda uyum indeksi değerleri $\chi 2/df=3,05$, NFI=.964, CFI=.976, TLI=.951, RMSEA=.075 olarak bulunmuştur ve bu değerler kabul edilebilir düzeydedir. Doğrulayıcı faktör analizi sonucunda orijinal ölçekteki 8 madde ve dört faktörlü yapı doğrulanmıştır. DDGÖ-8 amaç, dürtü, kabullenmeme ve strateji alt boyutlarından oluşsa da ölçeğin yorumlanmasında alt boyutlardan elde edilen puanlara değil de ölçeğin toplam puanına dikkat edilmesi gerekmektedir.

Ölçüt geçerliliği için Rugancı ve Gençöz (2011) tarafından Türkçeye uyarlanan Duygu Düzenlemede Güçlükler Ölçeği kullanılmıştır. DDGÖ-8 ve Duygu Düzenlemede Güçlükler Ölçeği arasında pozitif yönlü manidar ilişki bulunmaktadır. Bu durum DDGÖ-8'in duygu düzenlemede güçlükler yaşayan yetişkinler için geçerli bir ölçüm aracı olduğunu göstermektedir.

Ölçeğin güvenirliği için Cronbach alfa iç tutarlılık katsayıları ve madde analizlerinden yararlanılmıştır. İç tutarlılık kat sayısı ölçeğin tamamı için .87 olarak belirlenirken alt boyutlarına ilişkin güvenirlik değeri 0.68 ve 0.77 arasında değişmektedir. Ölçeğin tamamı için güvenirlik yüksek düzeydedir. Madde analizi kapsamında yapılan madde-toplam puan korelasyonları ise .52 ve .70 arasında değer aldığı için ölçek maddeleri arasında bütünlük olduğu görülmüştür. Ayrıca madde ayırt ediciliği sonucunda DDGÖ-8'in duygu düzenleme güçlüklerini belirlemede ayırt edici olduğu söylenebilir (Büyüköztürk, 2020).

Yapılan analizler sonucunda DDGÖ-8 için geçerlilik ve güvenirlik değerlerinin uygun olduğu görülmektedir. Dört alt boyut ve 8 maddeden oluşan DDGÖ-8'in Türkçe formu kullanıma uygundur. Duygu Düzenlemede Güçlükler Ölçeğinin bu kısa formunun duygu düzenlemedeki güçlüklerini tek bağlam içerisinde daha kısa sürede belirleyerek duygudurum ile ilgili sorunların tanınmasında fayda sağlayacağı düşünülmektedir. Yetişkinlerde duygu düzenleme güçlükleri ile ilgili araştırma çalışmalarında ölçeğin daha kısa sürede doldurulması,

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ters puanlanan maddenin bulunmaması ve alt boyutlarına rağmen sadece toplam puan üzerinden değerlendirme yapılması ile gelecek çalışmalara pratiklik katacağı düşünülmektedir.

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KİŞİLERE BAĞIMLI-BAĞIMSIZ PROBLEM ÇÖZME ÖLÇEĞİ: TÜRKÇEYE UYARLAMA ÇALIŞMASI

Halil Ekşi[1] & Neslihan Turan[2]
[1]Marmara University, Institute of Educational Sciences, İstanbul/ TÜRKİYE
orcid.org/0000-0001-7520-4559
[2]Marmara University, Institute of Educational Sciences, , İstanbul/ TÜRKİYE
orcid.org/0009-0002-1959-9722

Öz

Bu çalışmanın amacı Sanatkar ve Rubin (2022) tarafından ikinci versiyonu yapılan Kişilere Bağımlı-Bağımsız Problem Çözme Ölçeğinin Türkçe diline uyarlanmasıdır. Ölçek kişilerin problemlerini çözmelerinde başkalarına danışmayı mı yoksa kendi başlarına mı çözmeyi tercih ettiklerini ölçmek amacı ile geliştirilmiştir. Ölçek 2 faktörden oluşmakta olup birinci faktör kişilere bağımlı problem çözme ikinci faktör bağımsız problem çözme tarzıdır. Ölçek, 5 maddesi bağımsız problem çözmeyi ve 5 maddesi bağımlı problem çözmeyi ölçen toplam 10 maddeden oluşmaktadır. Ölçek iki dile de hâkim 5 uzman tarafından Türkçe diline uyarlaması yapılıp 3 uzmandan oluşan bir panelde Türkçe formu oluşturulmuştur. Türkçe formun 10 kişiye uygulanan pilot çalışması yapıldıktan sonra geçerlilik ve güvenirlilik çalışmaları için uygun örnekleme yöntemi ile ölçek 274 kişiye (231 kadın ve 43 erkek) uygulanmıştır. Ölçeğin faktör analizinde madde yükleri .47 ve .86 arasında değişmektedir. Güvenirlik analizi sonucu Cronbach Alpha iç tutarlık katsayısı bağımsız ve bağımlı problem çözme için sırasıyla .705 ve .693 olarak bulunmuştur. Ölçeğin ölçüt geçerliği çalışmasında Sosyal Provizyon Ölçeği 58 (44 kadın ve 14 erkek) kişiye uygulanmış olup korelasyon değeri .658 olarak bulunmuştur. Araştırma sonucunda Kişilere Bağımlı-Bağımsız Problem Çözme Ölçeğinin geçerli ve güvenilir bir ölçek olduğu tespit edilmiştir.

***Anahtar Kelimeler**:* problem çözme, bağımlı, bağımsız, ölçek, uyarlama, yardım arama

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Abstract

The purpose of this study is to adapt the Independent-Interdependent Problem-Solving Style Scale, developed second version by Sanatkar and Rubin (2022), into the Turkish language. The scale was developed to measure individuals' preference for seeking help from others or solving problems on their own. The scale consists of 2 factors, the first factor is interdependent problem solving, the second factor is independent problem-solving style. It consists of a total of 10 items, with 5 items measuring independent problem solving and 5 items measuring interdependent problem solving. The scale was adapted into Turkish by five experts proficient in both languages and a Turkish version was formed through a panel consisting of three experts. After conducting a pilot study with the Turkish version administered to 10 individuals, the scale was applied to 274 participants (231 females and 43 males) for validity and reliability analyses. Convenient sampling method was used as the sampling technique. As a result of the reliability analysis, the Cronbach Alpha internal consistency coefficient was found to be .705 and .693 for independent and interdependent problem solving, respectively. For the criterion validity of the scale, the Social Provisions Scale was administered to 58 participants, and correlation value were found .658. The research findings indicate that the Dependent-Independent Problem-Solving Scale is a valid and reliable measure.

***Keywords**:* problem solving, independent, interdependent, scale, adaptation, help seeking

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Giriş

Kişilere bağımlı-bağımsız problem çözme, Cross ve arkadaşlarının (2000) ilişkisel-bağımlı benlik yapısı kavramı üzerine temellendirilmiştir (Sanatkar & Rubin, 2022). İlişkisel-bağımlı benlik yapısında kişiler kendilerini arkadaşları, aileleri ve partnerleri ile ilişkileri ve bağları üzerinden tanımlarlar. Bu kavarama göre kendilerini ilişkilerine göre tanımlayan kişilerin bağımlı problem çözücüler, kendilerini yetenekleri ve karakterleri üzerinden tanımlayan kişilerin ise bağımsız problem çözücüler olarak tanımlanmıştır. Örneğin, sosyal, akademik, ilişkisel vb. çeşitli problemleri kendi başına çözmeye çalışan insanlar bağımsız problem çözmeye eğilimli iken yakın çevresine, ailesine veya bir uzmana danışarak yardım arayan insanlar kişilere bağımlı problem çözme eğilimindedirler (Sanatkar & Rubin, 2022). Kişilere bağımlı problem çözen kişiler problemi çözmeye odaklı ve yaşadıkları kararsızlıklarda yardım için başkalarına danışırken, bağımsız problem çözen kişiler diğer kişilere danışmayı stresli ve çatışmalı gördükleri için problemleri kendi başlarına çözmeyi tercih ediyorlar (Sanatkar & Rubin, 2022).

Araştırmalar incelendiğinde çalışmaların çoğunun daha çok başkalarından yardım arayan kişiler üzerine olduğu görülmüştür (Akınbobola ve ark., 2018; Bumbacco, 2016; Seward & Harris, 2016). Yardım arama literatürde psikolojik yardım arama ve evlilikle ilgili konularda yardım arama gibi farklı alanlarda ve konularda incelenmiştir. Yardım arama tutum ve davranışları daha çok psikolojik yardım arama üzerine araştırılmıştır. Thorne ve Ebener (2020) psikolojik yardım arama üzerine yaptıkları bir araştırmada kırsal kesimdeki kişilerin psikolojik yardım arama davranışını zihinsel hastalıklarla ilgili edinilen bilgilerin etkilediğini bulmuşlardır. Ayrıca, zihin sağlığı ile ilgili negatif tutumlar ve damgalamaların zihinsel sağlıkla ilgili yardım arama üzerinde etkisi vardır (Schnyder ve ark., 2017). Ergenlerde yapılan bir çalışmada ise aktif başa çıkma stratejilerinin psikolojik yardım arama tutumunu yordadığı bulunmuştur (Çuhadar, 2020) Deneyime açıklığı düşük ve bağımsız problem çözme yönelimli kişilerin muhtemelen olumsuz duygusal kalıplara yol açabileceği öngörülmüştür (Sanatkar, 2020). Bu yüzden psikolojik danışmanların deneyime açık olmayan ve bağımsız problem çözen kişilere problem çözmelerinde başkalarından yardım isteme tutum ve davranışları üzerine

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çalışması önerilmiştir. Bunların yanında psikolojik yardım arama tutumu ile ilgili geliştirilen bir psikoeğitim programının yardım arama davranışını olumlu yönde etkilediği de gözlemlenmiştir (Vergili, 2017).

Yardım arama davranışı cinsiyet faktörü açısından bakıldığında kadınların yardım arama davranışına erkeklerden daha olumlu baktığı gözlemlenmiştir (Çuhadar, 2020; Baran, 2022; Serim ve Çankaya, 2015). Buna karşın yardım arama davranışının cinsiyete göre değişmediği görülen araştırmalar da bulunmaktadır (Öcal, 2019; Cohen, 2022). Sosyal sınıf açısından problem çözmeye bakıldığında daha yüksek sosyal sınıftaki kişilerin daha çok kişilere bağımlı problem çözenler olduğu gözlemlenmiştir (Sanatkar & Rubin, 2022). Uyruk üzerinden yapılan bir araştırmada ise yabancı uyruklu kişilerin yardım arama girişimleri Türk uyruklu kişilere göre daha yüksek çıkarken, Türk uyruklu kişilerin yardım arama tutumları yabancı uyruklu kişilerden daha yüksek çıkmıştır (Yelken ve ark., 2020).

Evlilikte yardım arama davranışı partnerler arası uyumu etkilediği sonucuna ulaşılmıştır (Öcal, 2019). Çiftelerin evliliklerinde problem yaşaması çiftlerdeki uyum düzeyini düşürürken, çifti yardım arama davranışını da arttırıyor. Öcal (2019) evli partnerlerin yaşlarının ilerlemesi ve evlilik süresinin artması ile yardım arama tutumlarında olumlu değişiklerin olduğunu gözlemlemiştir. Ayrıca, aile kökeni ile ilgili yaşanan ilişkisel sorunlarda çiftlerin yardım aramaya daha olumlu baktığı da bulunmuştur (Baran, 2022). Bu çalışmada ulaşılan bir diğer sonuç ise, algılanan sosyal desteğin yardım arama tutumu için önemli bir faktör olduğudur.

Yapılan araştırmalar incelendiğinde, bireylerdeki yardım arama tutum ve davranışları ile ilgili pek çok çalışma varken bireyin kişilerden bağımsız problem çözmelerine yönelik araştırmaları yeterli düzeyde olmadığı görülmüştür. Kişilere bağımlı-bağımsız problem çözme ölçeğinin diğer insanlardan yardım almadan sorunlarını kendi başına çözen bireyleri de ölçmesi literatürdeki bu boşluğun doldurulmasını sağlayacaktır. Ayrıca, bu ölçeğin diğer ölçeklerden farkı hem kişilere bağımlı hem de kişilerden bağımsız problem çözmeyi ölçüyor olmasıdır. Bireylerin yardım arama tutum ve davranışlarını ölçen pek çok ölçek literatürde bulunmaktadır (Koç, 2016; Koç, 2013; Sezer ve Kezer, 2013; Kaya ve ark., 2015). Bu ölçekler psikolojik yardım arama gibi belli alanlardaki yardım aramayı ölçüyorken Kişilere Bağımlı-Bağımsız

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Problem Çözme Ölçeği daha geniş ve genel olup bütün konuları kapsamaktadır. Bu çalışmada Sanatkar ve Rubin (2022) tarafından ikinci versiyonu yapılan Kişilere Bağımlı-Bağımsız Problem Çözme Ölçeğinin Türkçe diline uyarlanması amaçlanmaktadır.

Yöntem

Çalışma Grubu

Çalışmada uygun örnekleme yöntemi kullanılmıştır. Katılımcılar 18-65 yaş arası 231 (%84,4) kadın ve 43 (%15,6) erkekten oluşan 274 yetişkin bireyden oluşmaktadır. Ölçüt geçerliği için kullanılan ölçekler 44 kadın ve 14 erkekten oluşan 58 kişiye uygulanmıştır.

Veri Toplama Araçları

Kişilere Bağımlı-Bağımsız Problem Çözme Ölçeği

Independent-Interdependent Problem-Solving Style Scale Mark Rubin, Sue E. Watt, Marcella Ramelli tarafından 2012 yılında geliştirilmiş ve bu makalede Türkçe 'ye uyarlanmıştır. Bu ölçeğin Türkçe ismi olarak 'Kişilere Bağımlı-Bağımsız Problem Çözme Ölçeği (KBBPÇ)' tercih edilmiştir. Ölçek kişilerin problem çözmelerinde başkalarından yardım alarak mı yoksa kendi başına mı çözmeyi tercih ettiklerini ölçmek amacıyla geliştirilmiştir. Samineh Sanatkar ve Mark Rubin 2022 yılında ölçeğin geçerlik ve güvenirlik çalışmalarını yapmış ve ölçeğin 2. versiyonunu oluşturmuşlardır. Ölçek tek faktörlü olarak geliştirilmesine rağmen analizler sonucu 2 faktörlü (1. kişilere bağımlı problem çözme, 2. Bağımsız problem çözme) bir yapıda olduğu görülmüştür. Ölçek birinci versiyonda 12 madde iken ikinci versiyonda 10 maddeden oluşmaktadır. Maddelerden 5 tanesi (1., 3., 4., 8., ve 9. maddeler) bağımsız problem çözmeyi, 5 tanesi (2., 5., 6., 7., ve 10. madde) de bağımlı problem çözmeyi ölçmektedir. Ölçek puanlanırken bağımsız problem çözme üzerinden yapılacaksa bağımlı problem çözme maddeleri tersine çevrilip 10 maddenin ortalaması hesaplanır. Bağımlı problem çözme için ise tam tersi bağımsız problem çözme maddeleri tersine çevrilip ortalama hesaplanır. Ölçek, 7 aralıklı (1= Kesinlikle katılmıyorum, 7= Kesinlikle katılıyorum) Likert tipi bir ölçektir. Ölçeğin ikinci versiyonunun güvenirlik ve geçerlik çalışmalarında katılımcı sayısı 1157 kişiden oluşmaktadır. Rubin ve ark. (2012) ölçeğin faktör analizi (eigenvalue=3.96) ve iç tutarlılık (αs = .77 & .80) ile geçerlik ve güvenirlik çalışmalarını

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yapmıştır. Sanatkar ve Rubin (2022) ölçeğin keşfedici faktör analizini eigenvalue=4.75 olarak tespit etmiş ve maddelerin faktör yüklerini .41 ve .79 arasında bulmuştur. İç tutarlılık için maddelerin McDonald's omega katsayılarının .85 ve .89 arasında değiştiğini bulmuştur. Ölçeğin diğer ölçeklerle korelasyonlarına bakıldığında General Help-Seeking Questionnaire (Wilson et al., 2005) ölçeğinde kişisel problem ve intihar krizi ile negatif bir ilişki (rs = −.53 and −.44, respectively, ps<.001), 13 maddeli Decision-Making Collaboration Scale (Anderson et al., 1998) ile negatif bir ilişki (rs = −.15, ps<.001), ve 24 madde Social Provisions Scale (Cutrona & Russell, 1987) ile negatif bir ilişki (rs = −.32, ps<.001) bulunmuştur.

Sosyal Provizyon Ölçeği

Cutrone ve Russell tarafından 1987 yılında geliştirilen Social Provision Scale, Duru Erdinç ve Murat Balkis tarafından 2007 yılında Türkçe'ye uyarlanmıştır. Ölçek 20 maddeden oluşup 4'lü (1=Kesinlikle Katılmıyorum, 4=Tamamen katılıyorum) Likert tipi ölçektir. Ölçeğin örneklemi 320 kız ve 217 erkeğin katılımıyla toplam 537 kişiden oluşmaktadır. Ölçeğin güvenirlik çalışmasında iç tutarlık katsayısı .90 olarak bulunmuştur. Güvenirlik çalışması için yapılan faktör analizinde ise maddelerin faktör yükleri .37 ile .77 arasında değişmektedir.

İşlem

Öncelikle ölçeğin Türkçeye uyarlanması için sorumlu yazar Samineh Sanatkar'dan izin alınmıştır. Daha sonra ölçek iki dile de hâkim 5 uzman tarafından Türkçe diline çevrilmiştir. Üç kişilik bir uzman grubuyla panel yapılarak yapılan çevirilerden Türkçe diline en uygun ifadeler seçilip ölçeğin Türkçe formu oluşturulmuştur. Daha sonra ölçeğin Türkçe formu bir Türk dili uzmanı tarafından değerlendirilmiştir. Bunlara ek olarak ölçek iki dile de hâkim bir uzman tarafından tekrar İngilizceye çevrilip orijinal ölçek ile karşılaştırılmıştır. Ölçeğin anlaşılırlığını değerlendirmek için 10 kişiden geri bildirim alınmıştır. Bu değerlendirmeler sonucu incelenip ölçeğin son hali oluşturulmuştur.

Ölçeğin yapı geçerliği için Google Form aracılığıyla 312 kişiden veri toplanmıştır. Bazı kişilerin verilerinde yanlışlık olması sebebiyle analizden çıkarılarak örneklem grubu 274 kişiden oluşmuştur. Veriler SPSS ve Jamovi programları kullanılarak incelenmiştir. Ölçeğin benzer ölçek geçerliliği için orijinal ölçekte kullanılan Sosyal Provizyon ölçeği seçilip 58

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kişiye uygulanmış ve uygulama sonucu ulaşılan verilerin korelasyon değerleri değerlendirilmiştir. Daha sonra ölçeğin güvenirlik analizi için Cronbach Alpha katsayısı incelenmiştir. Son olarak ölçeğin madde ayırt ediciliğini ölçmek için alt-üst gruplar belirlenip ilişkisiz örneklem t testi analizi yapılmıştır.

Bulgular

Doğrulayıcı Faktör Analizi (DFA)

Doğrulayıcı faktör analizi (DFA) daha önceden geliştirilmiş bir ölçeğin yapısının başka bir kültürde geçerliğini teyit etmek için yapılan bir analizdir. Ölçeğin geçerliliği teyit edilirken faktör yükleri ve uyum indeksleri incelenir ve bu değerlerin kabul edilir düzeyde olması beklenir. Byrne, (2010) iyi uyum ve kabul edilebilir uyum değerlerini Tablo 1'deki gibi açıklamıştır. Tablo 1'de Kişilere Bağımlı-Bağımsız Problem Çözme Tarzı Ölçeğinin uyum indeksi değerlerinin $\chi 2$ /df=2,49, RMSA=.074, CFI=.905, TLI=.874, SRMR=.056 olduğu görülmektedir. Elde edilen değerlerin kabul edilebilir düzeyde olduğu tespit edilmiştir. Analiz sonuçlarına göre ölçeğin madde yükleri Şekil 1'de gösterildiği üzere .47 ve .86 arasında değiştiği tespit edilmiş ve ölçeğin Türk kültüründe geçerli olduğu sonucuna ulaşılmıştır.

Tablo 1
Uyum İyiliği İndekslerine İlişkin Değerler

Uyum indeksi	Elde edilen değerler	İyi uyum	Kabul edilebilir uyum
$\chi 2$ /df	2,49	$0 \leq \chi 2$ /df ≤ 2	$2 \leq \chi 2$ /df ≤ 5
RMSEA	.074	$0 \leq$ RMSEA $\leq 0,05$	$0,05 <$ RMSEA $\leq 0,10$
CFI	.905	$0,95 \leq$ CFI $\leq 1,00$	$0,90 \leq$ CFI $< 0,95$
TLI	.874	$0,95 \leq$ TLI $\leq 1,00$	$0,80 \leq$ TLI $< 0,95$
SRMR	.056	$0 \leq$ SRMR $\leq 0,05$	$0,05 <$ SRMR $\leq 0,10$

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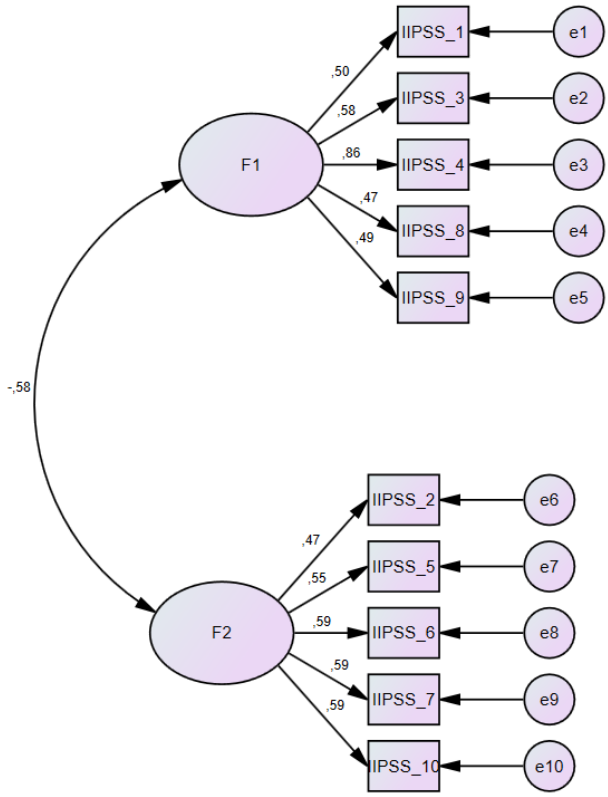
Şekil 1



Not. F1= bağımsız problem çözme; F2= bağımlı problem çözme

Ölçüt Uyum Geçerliliği

Kişilere Bağımlı-Bağımsız Problem Çözme Tarzı Ölçeğinin ölçüt geçerliliği için Sosyal Provizyon Ölçeği (Cutrone ve Russell, 1987) ile toplam puanları arasında Pearson korelasyon değerleri incelenmiştir. Analizde bağımlı problem çözme toplam puanları ile Sosyal Provizyon Ölçeğinden alınan toplam puanlar arasında pozitif yönde anlamlı bir ilişki olduğu bulunmuştur ($r=.658$, $p<.01$). Analiz sonuçlarına göre ölçeğin ölçüt uyum geçerliliğinin sağlandığı sonucuna ulaşılmıştır.

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Tablo 2
IIPSS ve Sosyal Provizyon Ölçeği Arasındaki Korelasyon Değeri

Değişkenler	*N*	*r*	p
Madde toplam değerleri	58	.658	.000*

*$p<.01$

Güvenilirlik Çalışması

Güvenirlik analizi ölçeğin maddelerinin birbirleriyle ne kadar tutarlı olduğunu tespit etmek amacıyla uygulanır. Ölçeğin iç tutarlılık katsayısı Cronbach Alpha değerine bakılarak görülebilir. Bu değerin .60'ın üzerinde olması ölçeğin güvenilir olduğu anlamına gelmektedir. Tablo 3 incelendiğinde Cronbach Alpha iç tutarlılık katsayılarının bağımsız ve bağımlı problem çözme için sırasıyla .705 ve .693 olduğu görülmekle birlikte ölçeğin güvenilir olduğu sonucuna ulaşılmıştır.

Tablo 3

Ölçek Alt Faktörler Güvenirlik Analizi

	Cronbach's α
Bağımsız Problem Çözme	.705
Bağımlı Problem Çözme	.693

Madde Analizi

Madde analizi ölçeğin maddelerinin ölçeğin amacına uygun olup olmadığını tespit etmek amacıyla maddelerle toplam puan arasındaki ilişkiler incelenerek gerçekleştirilir. Analiz sonucunda düzeltilmiş madde toplam test korelasyonu (DMTTK) değerlerinin .30 üzerinde çıkması beklenmektedir (Hasançebi vd., 2020). Bağımlı-Bağımsız Problem Çözme Tarzı

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Ölçeğinin DMTTK değerlerinin .342 ile .628 arasında değiştiği Tablo 4'te görülmektedir. Bu verilere göre ölçek maddelerinin ölçeğin amacına uygun olduğu sonucuna varılmıştır.

Tablo 4

Düzeltilmiş Madde Toplam Test Korelasyonları ve Betimsel istatistikleri

Madde no	x̄	ss	DMTTK
IIPSS1	3.62	1.62	.415
IIPSS2	5.48	0.98	.342
IIPSS3	3.99	1.76	.430
IIPSS4	3.58	1.63	.628
IIPSS5	5.12	1.36	.398
IIPSS6	5.12	1.28	.398
IIPSS7	3.00	1.45	.433
IIPSS8	3.81	1.70	.383
IIPSS9	2.54	1.54	.430
IIPSS10	2.82	1.41	.530

Not. DMTTK=düzeltilmiş madde toplam test korelasyonu

Maddelerin ayırt ediciliğini değerlendirmek için ilişkisiz örneklem t testi analizi yapılmıştır. Örneklem grubunun %27'si alınarak üst grup 74 ve alt grup 74 kişi olarak toplam 148 kişi analiz edilmiştir. Tablo 5'te gösterildiği gibi t puanlarının -12 ve 10 arasında değiştiği gözlemlenmiş ve alt-üst grup arasında anlamlı bir fark olduğu sonucuna ulaşılmıştır.

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Tablo 5

%27'lik Alt ve Üst Grup Farkına İlişkin t Değerleri

Madde no	t	p
IIPSS1	10.031	.000*
IIPSS2	-6.397	.000*
IIPSS3	10.862	.000*
IIPSS4	16.672	.000*
IIPSS5	-8.863	.000*
IIPSS6	-8385	.000*
IIPSS7	-10.309	.000*
IIPSS8	9.531	.000*
IIPSS9	9.298	.000*
IIPSS10	-12.023	.000*

*$p<.01$

Tartışma

Bu çalışmanın amacı Sanatkar ve Rubin (2022) tarafından ikinci versiyonu yapılan Kişilere Bağımlı-Bağımsız Problem Çözme Ölçeği'nin Türkçe diline uyarlanması ve psikometrik özelliklerinin incelenmesidir. Gerekli izinler alındıktan sonra ölçek iki dile de hâkim 5 uzman tarafında Türkçe çevirisi yapılmıştır. Yapılan 5 çeviri 3 dil uzmanı tarafından değerlendirilmiş ve ölçeğin son hali oluşturulmuştur. Ölçeğin dil anlaşılırlığını ölçmek için 10 kişiye pilot uygulama yapıldıktan sonra veriler toplanmıştır.

Ölçek tek boyutlu olmasına rağmen ölçeğin analizleri 2 boyut üzerinden yapılmıştır. Sanatkar ve Rubin (2022) yaptıkları doğrulayıcı faktör analizinde modelin tek boyut yerine 2 boyutta daha iyi bir model uyumu gözlemlemiştir. Bu yüzden analizlerini 2 boyut üzerinden

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yapmışlardır. Bu boyutlar bağımlı problem çözme ve bağımsız problem çözmedir. Sanatkar ve Rubin'in çalışmasına paralel olarak bu çalışmada da ölçeğin iki boyutlu analizlerinin daha iyi model uyumu gösterdiği tespit edilmiştir. Ölçeğin uyum indeks değerleri kabul edilebilir düzeydedir.

Ölçüt geçerliliği için Bağımlı-Bağımsız Problem Çözme Tarzı Ölçeği ile Sosyal Provizyon Ölçeği (Cutrone & Russell, 1987) arasında anlamlı bir ilişki bulunmuştur. Bu çalışma Sanatkar ve Rubin (2022)'in yaptığı çalışma ile paralellik göstermektedir. Sanatkar ve Rubin de kendi çalışmasında iki ölçek arasında anlamlı ilişki bulmuştur.

Ölçeğin güvenirlilik analizi için Cronbach Alpha değeri incelenmiş ve ölçeğin güvenilir olduğu sonucuna ulaşılmıştır. Bu çalışmada Cronbach Alpha değeri .77 iken Sanatkar ve Rubin (2022) iç tutarlılık için maddelerin McDonald's omega katsayılarının .85 ve .89 arasında değiştiğini bulmuştur.

Bunlara ek olarak, ölçeğin madde analizi için düzeltilmiş toplam test korelasyonları incelenmiştir ve değerlerin kabul edilebilir düzeyde olduğu tespit edilmiştir. Bu değerlerin yüksek olması her bir maddenin benzer davranışları örneklediğini göstermektedir. Maddelerin ayırt ediciliğini ölçmek için alt ve üst gruplar belirlenip bağımsız örneklem t testi yapılmıştır. Yapılan analiz sonucu gruplar arasında anlamlı bir fark olduğu gözlemlenmiştir. Gruplar arasında fark olması ölçeğin bağımlı ve bağımsız problem çözenleri ayırt edebildiği anlamına gelmektedir.

Sonuç olarak Bağımlı-Bağımsız Problem Çözme Tarzı ölçeği Türkçe uyarlanmış geçerli ve güvenilir bir ölçek olduğu gösterilmiştir. Bu ölçek kişilerin problemlerini çözmelerinde iki tür davranışı ölçmektedir: başkalarından yardım alarak problem çözenler ve problemlerini kendi başına çözmeye çalışanlar. Bu ölçekte problem çözme genel problem çözme davranışlarını kapsadığından akademik veya evlilik gibi pek çok konuda bu ölçek araştırmacılar tarafından kullanılabilir.

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CONSTRUCTIVISM on MADURA'S CHILDREN TALES

PhD, Imron Wakhid, Harits
Trunojoyo University, Indonesia
ORCID Number:0000-0003-1848-7753

Abstract

Trend in the learning process today tends to explore the learner's competencies with several things, like Engage, elicit, explore, explain, Elaborate and Extend. In the principles of the constructivism, this is a salient connection between the learners and the teacher to engage the social experiences of the student. The prior knowledge and experiences of the learners will take a substantial role in the constructivism. At least when discussing about the constructivism, it cannot separate with Albert Bandura and Jean Piaget's theory. If Bandura focuses on the social's views in Piaget focuses on psychology's views. While the theory of Constructivism applies to the Madura's children tales, such as Madura stories, the K-W-L method from Donna Ogle is appropriate to examine the stories. K is to know, W is What do you want to know and L is what do you learn. These three aspects are a synergy to analyze the story and to explore the learner's competency based on Piaget and Bandura.

Keywords: Constructivism, K-W- L, Madura's children tales

Introduction

In line with the children stories source packs especially the folktales/fairy tales engages with their reading experiences and other experiences (history, social, culture) such as their prior knowledge about the literary works like the stories. The learners who have the prior knowledge and experiences dealt with some stories will be much easier to comprehend the story and could give much deeper analysis and criticism to the folktales/fairy tales. It is because the folktales/fairy tales from many different countries in Asia to Europe actually have the universal similarities. Perhaps some stories have their own uniqueness according to their own tradition,

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but the themes are similar, giving the moral messages to their posterity. In the process of teaching and learning in the children literature class, the engagement of some aspects like prior knowledge or schemata, experiences, and social environment as the basic of the social and historical background are needed to accomplish the aim of children stories learning. Thus, such all aspects are used to reconstruct the students' knowledge to gain the success of children stories appreciation. This theory is best known as the constructivism theory.

The constructivism is an extensive approach that includes the theories developed from the cognitive tradition and the socially – psychologically – interactionistic point of view (Vermeersch in Dostal, 2005, p.48). This theory is connected with the social experiences and human behavior and focusing the active role of the subject to cognize the world. For the constructivist the learning perspective is the changing of meaning according to pupil's experiences. Then the learners will create the new ideas in learning based on the previous knowledge. The constructivism, which uses the learner's environment which influences him/her is one way to solve such problem in children literature class. This term is suggested by Piaget (1926, Anderson 1977) then it spread out as the main theory in learning. Piaget advocates the child development and learning in the process of constructivism, he is eventually not the social constructivist, but his idea has given much inspiration to the social constructivism in the following era. The next constructivism after Piaget is much more emphasizing in the social context and culture or called social constructivism. The constructivist such as Vigotsky, Bruner, and Bandura employed the social context as the main idea in their theory.

Bruner's concept of constructivism obviously is based on the cognitive development theory from Piaget. He hereby suggests the framework of instruction with the cognition based. On the other hand, Bruner advocates the usage of the current and past knowledge to contract the new idea of learning, this is hopefully could make the learners are more active in the process of instruction. Bruner (1966) defines constructivism as an active process in which learners construct new ideas or concepts based upon their current/past knowledge. Further Bruner addresses four major aspects of instruction: (1) predisposition towards learning, (2) the ways in which a body of knowledge can be structured so that it can be most readily grasped by the

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learner, (3) the most effective sequences in which to present material, and (4) the nature and pacing of rewards and punishments. Meanwhile Social constructivist theory emphasizes the importance of culture and context in understanding what is experienced in the wider community and in constructing knowledge built on this understanding (Derry, 1999;McMahon, 1997 in Pritchard and Woollard, 2010,p.7). There is two types of social context in constructivism, first it is from learners point of view, it is his/her own particular culture and the second is according to the interaction among the learners.

In constructivist point of view, learners' environment will be the focus in the learning process together with their experiences, and knowledge. "…an activity and development of a learner gets into the center of attention (Juvova, Chudy, Neumeister, Plischke, Kvintova, p.2). Constructivism itself can be defined as learner conceptions of knowledge are derived from a meaning-making search in which learners engage in a process of constructing individual interpretations of their experiences (Applefield, Huber, Moallem, p.6). Then, Desforges looks the constructivism from the different point of view because he probes the constructivism from the process of mental in human's mind or it is called cognitive constructivism (Piaget). He suggests that constructivist should identifying learner's existing schemata and then arranging experiences that challenge those schemata and that provoke the construction of more advanced intellectual structures (p.71). Its intellectual structure relates with the students schemata or their prior knowledge for one topic of discussion and develop the new knowledge on it. Thus, the use of prior knowledge (schemata) will support the learners while they attempt to solve the problem in learning process. The teacher can help his/her students to recall their prior knowledge to comprehend one topic in the classroom. According to Byrness (1996) "Schemata serve several functions in learning: categorizing, remembering, comprehending and problem solving." First, schemata or prior knowledge links categorize our experiences more efficiently for processing. This categorization of information facilitates the processes of remembrance (recall), and comprehension (understanding), all of which make problem solving more productive".

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According to the definition of constructivism above, there are two main stream of constructivism principles, (1) knowledge is not passively received but actively built up by the cognizing subject; (2) the function of cognition is adaptive and serves the organization of the experiential world, not the discovery of ontological reality (Husen, Postlethweite, P.114). For the first principle, it needs the mutual interrelation between the learner and the teacher. Both of them must be active in the learning process, and the teacher is as the facilitator to trigger and explore to optimize learners' competence. Here, the learners do not only react to experience, but they reflect on it, and theorize it, developing mental structures or schemata for understanding it (Desforges, p.69). While, the second principle, in learning process it requires the contextual experience and social environment that support the learning process to get the aim of learning.

Based on the constructivist theory of learning, the following three basic concepts can be distinguished (Siebert, 1999):

1. Learning is the reflection of teaching – constructivism does not admit the fact that the self-realization can be determined, instructed, and informed from the surrounding environment.
2. Learning is an adoption of reality – the learner's own activity is emphasized, however it attributes cognitive openness to reality and is based on a single representative model.
3. Learning is an autonomously controlled cognitive system, which interacts with its own conditions, this differentiates and modifies the independence of its own structure. This is a radically constructivist thesis.

Constructivism is definitely relevant with the teaching children literature in the classroom. This method empowers the learners' real world experiences and social as well as cultural context of content. This method hereby appreciates the different perspective from the learners. These principles enable the learners' giving their opinions from the different point of views according to their experiences and their prior knowledge (schemata). It fits with the children literature teaching

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principles. During literary works could analyze and criticize using the different perspectives and theories, both intrinsically and extrinsically, the use of constructivism as the learning strategy will support the learners' understanding of the whole content of literary works and gives the different way in literary criticism.

Practicing constructivism in the teaching process in the class must apply the active and meaningful learning process. It must be student- centered, while the teacher as the facilitator during the learning process. The learners use their prior knowledge to link with the new ideas. It is according to Ausubel (1968) "To learn meaningfully, students must relate new knowledge (concepts and propositions) to what they already know." The prior knowledge linkages or schemata are very important aspect in constructivism based learning. Because the schemata affect the process of acquiring the new information of the learners. Leinhardt (1992 in Tan et. al. 2003) states it is also true that prior knowledge can inhibit or interfere with our acquisition of new information. Schemata is growth from time to time, it is not stagnant things. While the information is received thus moment by moment the schemata will be developed.

Schemata are very effective instrument to comprehending the topic of learning. Using schemata, it could effectively obtain the new perception of the knowledge. Further, in the process of acquiring the new knowledge, schemata select the incoming information then it is organized in the human mind. While the learner needs to engage and interpret the new idea of knowledge, he/she just makes a recall. The schemata are a kind of mental process where it there is a lot of incoming information, it will be enriched and enable the learners to recall the knowledge when they attempt to integrating and assimilating with the new materials.

Meanwhile, applying the constructivism method in Madura tales in the classroom needs the special strategies. It is because Madura tales are unique and several learners have forgot their culture though it is their own culture. For examples when in the classroom the teacher wrote 'Joko Thole'. In the learners' mind they suggest it is a ferry to cross the Madura, though actually it is the name of Madurese legend and it was so close with the Madurese history and social's

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life as well. It is not easy for the younger generation to recognize it. Thus, using the constructivism strategies with K-W-L from Donna M. Ogle it is expected to uncover the uniqueness and teach Madura tales to the young generation.

Discussion

Furthermore, when it is applied in the folktales/fairy tales as practiced in the classroom it is an important exploring the learner's curiosity of what is the content, how is its historical background, what kinds of the literature aspects etc. For instance according to the principles of constructivism that is applied in teaching folktales/children stories, Ausubel (1968) proposes the mental scaffolding to obtain the new information. Based on Vigotsky, then develop the cooperative learning to engage some of supporting elements in teaching aspects. The Vigotsky concept of scaffolding is developed by Donna Ogle with the K-W-L technique. It is the way of the teacher exploring the learner's prior knowledge. It is suitable with the principle of scaffolding, putting it all together. Ogle (1986,2008) remarks K-W-L (Ogle, 1986) is a process in which the teacher models and guides active engagement with informational texts. Such principles make up three factors, called KWL method. K is what you KNOW, W is what you WANT to know, and L is what you Learned. Below is the example of the table.

K What you KNOW	W What you WANT to know	L What you LEARNED

Ogle's Scaffolding chart

Further, The K - W – L chart can be used to observe and reconstruct the learner's prior knowledge, especially their knowledge dealt with the folktales/ children stories that they have read in the previous time. This table also gives the guideline both for the teacher and learners to engage during the process of teaching and learning folktales/fairy tales in the class. This chart is functioned to discuss the topic, theme, and in the end of learning it is used to determine the learning outcomes. The K-W principles give at the beginning of the process to explore the

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learner's prior knowledge, experiences, and competences of the stories (folktales/fairy tales) and the process of comprehending the stories. During the process the learner's attempt to recall and reconstruct their knowledge, experiences and coincidently the learners mind map their new idea about the stories. In the second step, the W process, the learners try to brainstorm and make some of inquiry questions knowing more detailed aspects and acquiring the deep message and the structure of the folktales. In such step, the teacher could ask the learners to collaborate and discuss with their partners and groups. The principle of collaborative learning was advocated by Vigotsky, one of the proponents in the constructivism. At last, the L step is the final phase of this exploring stories process. This process is the final result of their observation and investigation of the stories. The learners actively explore the meaning and importance of their learning process. The next, the teacher gives some of the feedback to the learners' discussion result.

The next, K-W-L chart is one of the appropriate and overwhelming strategies to inquiry, to explore, and to engage the understanding and comprehending of the learners within the text. The first phase of K or what they Know is the process of brainstorming. The teacher encourages the learners to suggest and explore their opinion of the targeted topic. In the case of folktales/fairy tales comprehending, the teacher could extend the questions in associated with the deeper aspects such as what do you know about the social life? What do you know about the historical context of the tales? What do you know about the authors? During the process of brainstorming, the learners could work independently because the teacher wants to know their real understanding and viewpoint within Czech, Slovenia, and compared with Madura tales. Their own preposition is definitely important as the inquiry process for the basic understanding. The table below show the process of the brainstorming (K) for the learners of children literature in the children literature class at University of Trunojoyo, Indonesia. They try elaborating their knowledge and engage their prior knowledge and experiences to answer it. They try to internalize the 1-2 stories from European (Czech and Slovenia) folktales/fairy tales as their limited viewpoint of European folktales/fairy tales especially from Czech and Slovenia. The

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hand in hand solution hereby focuses on the chance for reading the folktales/ fairy tales previously (1/2 stories).

What you **KNOW**
Please figure out what you have already known about European tales and also Madura traditional tales (please answer by your own) 1. Traditional tales in both cultural concepts have driven me into things I may know after do comprehensive reading and consider particular conclusion of divergences. I will proceed to break down the divergences into three stages. The first stage is night time—European is known as working people as well as American. Activities depicted in the folktales which are principally night work hours, take ball dance in fairy tales for instances. However, this climate is not fashionable due to Madura culture, they work at afternoon and head back home at night to get some sleep. Second stage is what truly bad is not always that bad. The devil depiction of European tales prefer not always be evil; they are indeed recto verso—two sides—like it can be either kind or hostile. In contrast, this traditional trait may have prevailed, or even preserved in Madura tales. Devil and Satan are always combination of traditional creature which thrust human to do anything worse. The final stage is adoration of religion. The previous stage displays why Satan is always bad in most Madura folktales, it is because indeed their believe concept still remains forever. Madura tales make a really deep cut in religion section. Stating in their religion that Satan and things are bringing negative vibes and so they should abnegation. Therefore, their religion truly affects the way folktales created whilst European folktales indifference the ideas of specific religion or believe; even occasionally there are few of tales constantly put religion exposure depend on aim of author and genre. .2.As I know European tales is told about the historical place, the story that happen in the past time but we can accept the story using our logic, the plot is not simple like in Indonesian folklore. European tales usually include devil on the story, but sometimes the devil was not an evil. Madura traditional tales is tales many of magic that cannot to be logically. Madura tales also include religious

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value of Madurese.

3. Honestly, I don't really know about Madura traditional tales because I come from Ponorogo so my family never told me about Madura tales. My family often told me about Javanesse tales or the popular tales like "Asal-usul Reog Ponorogo", "Malin Kundang", "Bawang Merah, Bawang Putih", "Tangkuban Perahu", "Asal-usul nama Banyuwangi", and many more. But, after I asked my friend who come from Madura and I do searching on Internet then I know some Madura traditional tales like "Legenda Asal-Usul Nama Madura", "Legenda Joko Tole", "Pak Molla", and many more. Some of Madura folktales are talking about the struggle of people who want to be a king in a palace. But if we take a look on European traditional tales, some of the story use fairy as their power of the story. European people, believes on fairy. Because that in their traditional tales, they use the fairy power there.

4. According to me, Most of European tales are used to inserting some magical aspects like fairy tale or heaven. Sometimes, I do find materials aspect and femininity in them, especially for the old European tales. The tales are made up full of problems and adventures, which catch more attention from the readers. For example, when I read two of Czech tales by the title *Kate and the Devil* and *The Golden Hills* I couldn't stop to read until they end. Because in my experience, I never found the interesting stories like them before. The way the authors describe and insert new ideas must be given such praise.

While Madura tales are full of moral value about God, parents, and religion. Some magical agent such as *Dukun* also inserted, like the Javanese tales. Besides that, the origin of place is the most of theme of their story.

5. European Tales full of imaginations with many unexpected plot and characters. The culture in the story of European tales is difficult to found. Sometimes the culture seems like global culture since the influence of western to the other country. Madura Tales Rich of the influence of Javanese culture and Islam. Kingdom centric.

shows the list of the learners' preposition after they read 1-2 folktales/fairy tales from Czech and Slovenia independently and randomly. The learners much emphasize on the characters, plot, and tradition in their brainstorming. From the K activity, the learners mostly try to engage their new experiences reading European folktales/fairy tales with their prior knowledge and current knowledge of their own folktales/fairy tales, some of them Madura and Java such as the legend from both of the islands. In Madura according to the respondents' opinion (Madura leaners) the majority of folktales/fairy tales is the legend, it is the ordinary human who have

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the power like gods or goddess. Lynch – Brown and Tomlison (1999) remarked legend is based on either real or supposedly real individual and their marveleous deeds (p.99). The learners almost could not find the fairy tales in Madura, they do not discover the fairy characters during their process of reading. Otherwise the characters in the Madura folktales are the powerful man or woman such as in *Joko Tole* and *Ke'lesap* stories.

Meanwhile the characters in European tales (Czech and Slovenia) have more variants, somehow it could be the man who has the magical power like the legend in Madura (Jason and Argonauts) and it could be the fairy even the devil. The devil character is something new for the respondents and it makes them in surprise. They make notes that the devil in Czech and Slovenia folktales/fairy tales context are totally different with the Madura tales context that put the devil always the wicked characters. The hero has to struggle very hard to defeat the devil, and it is the core in Madura tales. The respondents also compare the plot in both of the tales. The long tradition in literary folktales/fairy tales in Europe makes the respondents much more interesting to the way of the author's conveying the conflicts in the folktales/fairy tales. The adaptation of the folktales/fairy tales in Europe has brought to the better version of the tales and it makes the stories have the literature values. It differs from Madura folktales/fairy tales that mostly are the wonder folktales/fairy tales. The plot and conflicts in the wonder folktales/fairy tales is not really important because the purpose stress on the delivering the moral messages. In Madura Island there are thousands of folktales/fairy tales unluckily not a lot of them are rewritten and only few of them are documented.

Besides the characters and plot, the respondents also try engaging the tradition and the social life between Europe (Czech and Slovenia) and Madura Island tradition. They do not know too much about Czech and Slovenia but at least they try to use their brainstorming as the starting point of the further activities. Based on the respondents' brainstorming, the Madura Island folktales/fairy tales tradition is kingdom – centric because the stories always involves the noble family like the marriage between prince and princess, the conflict between one king and another, the queen sacrifice, and the banished princess. Furthermore in European

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folktales/fairy tales particularly Czech and Slovenia, the respondents remark that there are some of feminism values in the story. They discover some woman characters as the heroine in the stories, some of them also taking the important role in the stories. It is definitely different with Madura folktales that almost the hero is man then the woman is only object and media of conflict in the story.

The religion and belief takes an essential role in folktales/fairy tales brainstorming in tradition based. All of Madura folktales and fairy tales closely associated with the Islam and Hindu tradition, it affects to the social stratification or kingdom centric (Hindu). While in Czech and Slovenia some of them are got the Christianity influence such as the concept of from zero to hero (the third/ youngest will be the winner). An interesting viewpoint is the opinion through their analysis of the social life comparison between Europe and Madura. The working hour affects the plot and setting of the story. The setting of the ball for an instance, it reflects the night scene in European folktales/fairy tales. The night scene is really nice when the people go for the party, make some of the social interaction with others and even some of the love contact like the falling in love between two characters usually are happened at night during the party. The night life in European tales is glamorous, exciting, and luxurious. It is in acquaintance with the habit of the society where they work till the evening then the night is the time for relaxation and social interaction. On the other hand, in Madura the working hour is from morning to afternoon and generally they work as the farmer and fisherman. In the evening thus is time for sleeping, therefore there is not a lot of activities at night only taking a rest together with their family. This social habit particularly affects to the Madura folktales/ fairy tales. It could not be found the tradition of the ball at night in Madura tales. No folktales/fairy tales in Madura has the night setting mostly it is in the morning and at noon. Night party is not the tradition in Madura even though it is party for the wedding as well. The social background brainstorming analysis is interesting, and it is logic according to the short observation through the 2-3 Czech and Slovenia folktales/ fairy tales though the learners do not come to Europe yet. It proves that the folktales/fairy tales represents the culture and tradition. By reading the folktales/fairy tales and engage with the illustration that accompany inside, the learners can

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grasp the cultural understanding across nation. Such analysis is very meaningful to extend their comprehending of the tales. The connection between the setting and the social background of the story support the better engagement of the learners with the story because Madura Island and Europe definitely have different social and cultural background.

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The second step is K-W-L chart is W or What you want to KNOW? In this phase the teacher attempts to explore the learners' hopes from the process of learning folktales/fairy tales. After the brainstorming they have already known briefly about the uniqueness from both of different tales across nation. The teacher can ask them to make some of the questions according to their short observation to extend the understanding between the comparative study between Czech/Slovenia and Madura Island folktales/fairy tales. They could incorporate with their friend, elaborate the problem and list the questions together. Although they discuss it before, but the learners have their own curiousness as a result they have the variant of question that make it differs from one and others.

What you want to KNOW
Please specify what you want to know about European particularly Czech and Slovenia tales and Madura Tales (inquiry/ as many as you can) (you can collaborate with your friend) **First respondent** 1. Do European folktales involve animal in the plot? I mean it's about animal, like animal story. 2. Do they have myth folktales, especially in Slavic folktales, completely telling prophecies and witch? 3. I wonder, what's the most interesting part of animal folktales regardless value that sinks in the tales itself? (European, Slavic, Madura) 4. Is there any folktales emphasis on races, black and white people for instance? If so, what is the title to be honest? 5. Since Madura most folktales fashionable in people always relate to origin of someplace or something, do European tales have such a merit tales? 6. Do European folktales embrace season (S/S/F/W) much in their folktales or even as an essential item in their folktales? 7. Most of folktales are anonymous, what about Slavic tales, are all them have no authors? 8. Do European and Slavic folktales set in real place and nature? 9. Is there any contemporary folktales created in European which are contextually adapted from the tales with no author?

10. In three folktales you offer me to, do they have any folktales to encourage adolescence (not children) to preserve traditional attitude in their value?

Second respondent

I want to know, why they believe in fairy? And why they often use fairy power on their story?

Although the story is about the struggle of someone to get a position in some palace or place, to make them strong and can get the position, they often use fairy power in it.

And then, I want to know why European traditional tales more interesting than Indonesian traditional tales?

As well as we know that "The Golden Hill" story is mostly same with "Jaka Tarub" story from Indonesia. But why, when I read it, "The Golden Hill" story more interesting than "Jaka Tarub" itself?

Third respondent

I want to know about the extrinsic element (culture, habit, socio-economic, politics) in European particularly Czech which I influenced the plot.

Then in Madura tales, I want to know about the other story except Jokotole and Putri Kuning.

Fourth respondent

The uniqueness of culture in Czech.

- Mythological creatures in Czech.
- Are there some similarities in between Czech tales and Madura tales.
- The interesting conflicts and fights.
- The moral value.
- A good quotation about life.
- Interesting illustration pictures.

Madura Tales:

- The historical of some kingdoms and places in Madura.
- The legend characters.
- The correlation between the tales and the setting of place in the reality.
- The moral value.
- A good quotation about life.
- Interesting illustration pictures.

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Fifth respondent

Actually I want to read more Czech tales like two of stories ever be known in my class by Mr. Imron, because I think of other funny and interesting stories like them. I want to know about the methods and symbols used by the authors. Why always about fairy, heaven, and also tales will consist of Narratology by Vladimir Propp? Perhaps it relates to their culture, but I'm sure culture isn't the only reason. Why they never discuss about the origin of place like in Indonesia? Actually what that make they have different point of view about their theme?

So does Madura tales, why always about origin of place, religion, and moral value like usual. If this is about culture, why they are different with European tales in the way of story, but same in the way of inserting about Narratology.

The W Step

Curiousness to the folktales/fairy tales across nation has brought the learners into the dept exploration and the myriads of questions rising up in their mind. The east and west comparison in culture, tradition, habit, social life and politics come and engage into the learners' mind and it needs to be analyzed more. The close reading activity for the learners lead them into some of the deep understanding and it is a trigger to enter the next level of analysis. It is not merely about the topic and theme anymore but they want to know the historical, cultural, and political background that accompanying the folktales/fairy tales across nation. The uniqueness of the characters also becomes the focus of their further exploration of tales. During this step the teacher compile as many as can the questions from the learners. It is definitely the substance activity because their questions are as the gateway to come into the further analysis and activities for the next level of discussion and material. This activity also could measure the learner's understanding and prior knowledge. The learners who could make many interconnected questions have the broader prior knowledge and better understanding of folktales/fairy tales. By contrast when they could not give many interconnected questions they have the low level of understanding and knowledge. This case because the process of

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elaboration and engagement obviously depends on such as the learners reading experiences, engagement with the different culture, and the close reading process in the classroom.

The uniqueness of the folktales/fairy tales across nation particularly is the way out to continue learners' interest to the cultural, social, political and historical background. For examples the question about the animal characters in Czech and Slovenia folktales/fairy tales, in *Fire Bird* (Czech) and *the Golden Bird* (Slovenia) the animal as one of the main characters in the story. The vixen (Fire Bird) and The Bear (The Golden Bird) is the helper of the hero. Both of them have functioned as the fairy mother like in *Cinderella* story, seven dwarfs in *Snow White*, and the huntsman in *Little Red Riding Hood*. These animals as the helper probably only found out in the Slavic tradition stories (Czech, Slovenia). This uniqueness hereby attracts the learners to analyze and lead them to look for other uniqueness.

The social background makes the learners interesting to continue their folktales/fairy tales' observation. The diversities and race issues are the salient viewpoint in the notion of the social background of the folktales/fairy tales. The curiousness to some of the different characters from the different ethnic groups emerges in the process of inquiry. In respondents' mind that Europe does not the diversity, they thus try to the further observation in association with the different races of the characters in the story. The characters such as the black people (referring to Africa ethnic group) obviously could be found in some of Slavic stories (Czech and Slovenia). In Slovenia such character (the black people) can find out in the famous folksong and folktale, entitled *Lepa Vida* or *Beautiful Vida.* This folktale represents the woman's dream about her wealthy life and she was kidnapping by unidentified people (The character is black people) who brought her to Africa. Its story has two kinds of ending, one of them is tragic because she was leaving home and never coming back and the second version is happy ending. In this story, Vida obtained her hopes and she could back home together with her family again. This story proves that there also found the diversity and different race in Slavic story, the black people who kidnapping Vida and bring her to Africa. In Czech tales also could be found the different race character, it is in Nemcova's tale entitled, *The Black Princess.* This story was also depicted the black princess as the main character in the story who lived in the underground

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palace. The young man, Radovid, hereby married her and ignoring whether she is black or white. Thus the questions from the W phase are really deep inquiry because all of questions lead to the detailed observation of the folktales/fairy tales across nation such as the setting of the folktales/fairy tales. The setting of the Slavic tales refers to the life experiences and the literary history when the folktales/fairy tales found and written. The setting of the Black Sea sometimes is within the Czech tales though there is no sea in current Czech country. The Black Sea is located in Eastern Europe and it has the border with Russia and Turkey. The setting of the Black Sea possibly comes to Czech tales during the Hapsburg Empire.

The respondents are curious to the fairies character in the Slavic folktales/fairy tales either. The diversities and uniqueness of the fairies in the tales trigger the learners to probe some of weird characters and they compare it with Madura's tales. The animal as the helper (vixen, bear), mother's spirit, dream, the real fairy and even it is Lucifer as well. While in Madura tales the helper is himself/herself, it is the man/woman who has the magical and magnificent power. The power is the given from God, Gods and Goddess. The differences in fairies are caused by the different process of acculturation and adaptation of the tales. Madura's tales basically are Hinduism and Islam tradition (religion based). Also, in Madura tales mostly the folktales/fairy tales are not rewritten yet, it strongly affects to its variants including the variants of characters such as the fairy as the helper. On the other hand, the Slavic tales (Czech/Slovenia) have some engagements with the different culture and religion. It also has been through the process of adaptation. For example, Czech and Slovenia was under the Hapsburg empire for hundreds years. The process of germanization in Czech and Slovenia contributes to the changing of culture and tradition although they have their own tradition. The Brother Grimm tales gave much influence toward Czech and Slovenia tales including the fairies characters.

The next is the session as the background and point of view in the Slavic story. The respondents are really interested in this notion because the session background giving the dramatization effects to the story. It somehow determines the flowing of plot in the tales and

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the ending at the same time. The story from Karel Jaromir Erben , *the Snow Maiden*, this setting is during the winter till the end of winter and change into the spring. The plot and the ending of the story totally depend on the session. When the spring came, the sun rose, then the Snow Maiden was melted. Another tale, such as *Enchanted Castle* written by Kavcic, impliedly tell the session when the main character, youngest daughter of the merchant asking for three shoots of the singing tree. The singing tree that she planted then it can sing beautifully by the end of the year (it is probably in the winter session). Its trees hereby are as the media in the story that changing the life of the youngest daughter. The ending shows that the youngest girl married with the handsome prince and she could release the castle from the enchantment.

The last phase of learners' activity is L, or What you Learn. This step is the outcome of their learning process, their engagement, their exploration, and their scaffolding process. When the teacher lets them discussing and cooperating with their friends and group in the classroom, therefore the final result compiled and summarized in this step. This is the last process after the learners attempt to brainstorm their idea of folktales/fairy tales, continue to the next level by inquiring using some questions. The teacher supports them by providing some materials they needed and the meaningful information connected with the folktales/fairy tales from Europe particularly Slavic (Czech, Slovenia). The information can be in the form of the historical, social, and cultural background as well as the author biography and its literary history. The student can obtain the information by their own such as through the internet, magazine, and other media. The teacher then asks the learners comparing with Madura folktales. In this case some of the folktales are provided, but about the social, cultural, and historical background, the learners look for it by their own. It is not really hard for the respondents, because almost all of them are from Madura ethnic. They have already lived in Madura, mostly since their childhood, therefore they have engaged with Madura social life, culture, and tradition for many years. The table below shows their L activity compilation.

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L = what you Learn
Question : **Please write your opinion and observation after all of you have already read the Madura stories and Czech Stories briefly** **First respondent** I divide what I learned into subtopics involving: geographically, culturally, and socially. These elements matter to compare between the two epic folktales of Madura and Czech. Firstly, we know that Madura represents Indonesia as tropical island and Czech represents Europe as subtropical climates, in details, it means that the way land is constructed is totally different in both continents. Further, in Madura, it overemphasis on what the land looks like, which has been conventionally perpetuated as harsh, drought, and lacks of ponds or lakes exist. Therefore, the author brings up the issue as always as the characteristic of Madura island. Whilst Madura bombardier the readers with geography situation, not much European folktales -- especially Czech -- flaunt their geological location as main background of the folktales. Secondly, serve ourselves culture aspect in folktales is an obligation to counterbalance its plot. Most Madura folktales often prevail occult and prophecy into story, and make the details in serious package rather than humorous way whilst in Europe folktales such a thing is displayed in different ways, it could be satire, or humorous. Next is working hours, as we know that Madurese culturally work in the morning until dusk, however, European give different watershed on working hours, they intercept theirs from morning to night. Lastly, social condition can be assumed as a reflection of literature, we cannot assail this fundamental claim. Point one, an old single woman is always interesting as protagonist, they even set in wealth and or poverty. Point two, ancient kingdoms are set as background of the story. Point three, an ending of a story frequently conveys the reader to take lessons on how to bring everyone piece, welfare and blessing. However, in Czech folktales, such strong lesson and social condition as Madura folktales prevail barely to be discovered. While European reflects a condition of social in which they often provided wealthy. **Second respondent** After I read the story above, I think that Madura stories is full with magic. Magic that I mean here is they use the power of fairy or someone who has another power more than anyone else. The story also still about kingdom and struggle to get the throne or some position in it. I think, the end of Madura stories will be use as the name of a place in Madura or as the story about any place in Madura also.This is really different with Czech stories. Even some of Czech stories is use a power of fairy, but some of them feel like something that cannot imagine by our mind. For example like Kate and The Devil stories, how can the devil is afraid with Kate? We know that here, Kate is just a human and devil is a devil who have an evil power there. So I think this is a unique story, anyway. I can conclude that both od Madura stories and Czech stories are very interesting to read. Both of them has a uniquness and something that can entertain us as the reader. It also can increase our knowledge about the story of Madura and Czech. As well as we know that in this era, so many people that do not know about stories like that. They more interests to reading stuff like a romance novel or romance stories even they know if that is not really increase their knowledge.

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Third Respondent

According to me, as I have ever stated before that Madura stories are full of moral education. Most of them, as well as Javanese stories tell about kindness and relationship to the God. Sometimes, the magic power comes from dukun__the magical agent in the form of old man or woman. So far, many Madura stories I've read are about the origin of places and kingdom.

For Czech Stories, honestly it made me interest in the first time when Mr. Imron shared the stories in my class. I was admiring of the stories that made more complicated with exciting ending that can't be supposed before. I think, they also never tell about the origin of place (Or my hypothesis is wrong because I really never meet the Europe stories by the form of Legend a place). Again, just like *Kate and the Devil* story, the author involves Lucifer and some devils from hell. As well as *The Golden Hill* story which involves an angel as the character, means that here is the different between Madura and Czech stories about the way they deliver their belief in magic power.

The length between those stories also different, Czech automatically is longer than Madura stories, because we know that the problems also made more complicated and unusual. I think, Madura stories also can be made longer by adding some complicated problem in order the story can flow well and enjoyable. But it also depends on the culture and respond of people who read the stories, furthermore In my opinion, for the kind of story like folktales or fairytales the story which more complicated and ended unusual is more interesting. But, I enjoy both Madura and Czech stories. I've ever thought that I am going to lose folktales or fairytales after I read novel and short stories. But, after I read the Czech story, honestly I began to interest again to read folktales.

Fourth Respondent

According to my observation of Madura Stories and Czech Stories, I think there such differences between the two stories. Madura Stories focus on morality, value, and religious. The prominent figure in the three Madura stories is a woman who has problem with a man for example Syarifah Ambami with her husband, Bendoro Gung with her father, and the angel with her husband. Their patience face their problem reflects their high morality. Meanwhile Czech stories as I know it focus on entertaining with the genre romance and comedy.

Fifth respondent

Czech Tales is unexpected and more complicated than Madura Tales. As we know that Indonesian tales, especially Madura tales has no official printed book. If we compare both of them, we could find that both ideas of the story are great. Yet, the way of how the writer explores the idea is quite different. Czech tales is more interesting through the complicated development of the plot. The structure of the sentences and vocabularies is sample and it made the readers quite easy to understand the story. On the other hand, Madura tales is quite boring with the straight language and simple plot and conflict

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L step of scaffolding method

The learners in L phase elaborate their outcome of the close reading process into one to two paragraphs of summary. They compare the Slavs tales (Czech, Slovenia) and the Madura Island tales from many perspectives. Not entirely of their prepositions are true because they have a limited time for reading, but it could be used as the basic method for the folktales/fairy tales analysis. The learners also give some suggestions how to build up the story and make it more interesting, particularly for Madura Folktales/fairy tales. The suggestions are given after they engage with Slavic Tales that according to the learners are more complicated in its plot. The engagement with the literature context in comparing the tales across nation contributes to the process of reading and writing literary works especially reading and writing folktales/fairy tales as well as teaching children literature. This becoming very meaningful for the learners and authors when they want to write and rewrite the undocumented tales. The respondents engage and assimilate all of their prior knowledge and reading experiences in this L step. They engage with their current experiences during the learning process of the folktales/fairy tales. The level of the prior knowledge and experiences surely determine the process of engagement and the outcome of the last process of the scaffolding method. The learners with the more prior experiences could figure out the L step deeper and more detailed. For an instance, the first and the third respondent who give the holistic analysis toward the comparative study of the folktales/fairy tales between Slavic and Madura. Both of them view the folktales/fairy tales across nation from some different viewpoints. The literature aspects, sociological, religion, and educational views are the milestone of their outcome in this L step. Their opinion are not only focus on the development of the plot, conflict, and the figurative languages but also stress on the cultural, historical, and religion background that make the folktales/fairy tales across nation different. Meanwhile other respondents view the comparative study of folktales/fairy tales across nation only from one or two viewpoints. The rest of them look from the educational aspects such as the historical, sociological, or cultural viewpoint and others view them from the literature aspects only.

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Conclusion

The process of children literature observation and examining the learners practiced the scaffolding method. This method matches with the idea from Nikolajeva and Barone about the engagement. The learners have to engage their intellectual and emotional connection to find out and explore the narrative domain such as plot, characters, figurative language, and setting then they have to engage it with the historical, social, and cultural background of the children literature to get the better understanding. The scaffolding method is a part of the constructivism approach that is used in this research. Therefore getting the literary engagement (final result of children literature comprehending) the learners begins with the brainstorming process. They make notes what they know about the folktales/fairy tales, they reconstruct their prior knowledge and experiences using brainstorming strategy. They recall their past and current knowledge. The next the learners practice the inquiry with writing some of the related questions. After the teacher provides some materials and instructs them to read, the last phase is the exploring and engaging their capacity to construct their idea of the children literature across nation.

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ARTIFICIAL INTELLIGENCE: A WINNING STRATEGY IN SUSTAINABLE SUPPLY CHAIN EDUCATION

Dr. Ijaz Yusuf, Department of Operations and Supply Chain,
Dr. Hasan Murad School of Management, University of Management and Technology, Lahore
Pakistan

Abstract

The use of artificial intelligence (AI) in sustainable supply chain strategies is thoroughly examined in this research paper. This research intends to clarify the effectiveness, opportunities, difficulties, and suggestions for integrating AI technology in sustainable supply chain management by a systematic assessment of the literature, analysis of case studies, and synthesis of significant findings. The results show that AI is essential for boosting social responsibility, cutting waste, lowering environmental impact, and improving supply chain efficiency. Organizations are able to make wise decisions, optimize processes, and handle sustainability issues thanks to AI-driven decision-making and optimization methodologies. By utilizing AI algorithms, businesses may improve demand forecasting, inventory management, transportation logistics, and production scheduling. AI also makes real-time visibility and transparency possible, enabling improved product tracking, adherence to sustainability requirements, and satisfaction of consumer needs for transparency. Artificial intelligence (AI)-powered predictive analytics and risk management assist businesses in identifying risks and opportunities, promoting responsible supplier selection. It is necessary to address moral issues including bias, justice, and possible detrimental effects on the job market. Because so much data is needed to apply AI, there are also issues with data security and privacy. A successful deployment of AI may also be hampered by organizational and cultural issues, as well as technical difficulties and system integration. Organizations are advised to develop clear strategies that are in line with sustainability goals, invest in data quality and governance,

promote collaboration and partnerships, develop talent and skills, and set up systems for tracking and evaluating AI performance in order to ensure successful AI integration.

Keywords: Artificial Intelligence, Supply Chain Education, Application in companies, Supply Chain Initiatives.

1. Introduction

In today's globalized and interconnected world, supply chains serve as the backbone of the economy, facilitating the movement of goods and services from supplier suppliers to end consumers. Sustainability in supply chains encompasses environmental stewardship, social responsibility, and economic efficiency, aiming to ensure that operations are environmentally friendly, socially equitable, and economically viable in the long term both for company as well as for society.

The urgency to address sustainability within supply chains has grown as the world faces pressing environmental and social challenges, such as climate change, resource depletion, human rights violations, brain drain and labour exploitation. These challenges have prompted businesses, governments, and stakeholders to rethink their approaches to supply chain management education and explore innovative solutions that foster sustainable practices.

The integration of artificial intelligence (AI) in supply chain education for sustainable supply chain management is a winning strategy.

AI offers a range of solutions that enhance the effectiveness of supply chain management, enabling businesses to optimize processes, reduce waste, and make informed decisions that align with sustainability goals. This research explores the profound impact of AI on sustainable supply chains, discussing key aspects such as demand forecasting, inventory management, logistics optimization, and risk mitigation.

In today's world, where environmental conservation and responsible resource management are pressing concerns, companies are under immense pressure to develop sustainable practices that minimize their ecological footprint. AI offers a wide range of solutions that enhance the

effectiveness of supply chain management, enabling businesses to optimize processes, reduce waste, and make informed decisions that align with sustainability goals.

One area where AI proves invaluable is demand forecasting. Accurate demand forecasting is crucial for efficient inventory management and minimizing waste. By analysing historical data, market trends, and various external factors, AI algorithms can predict demand patterns with remarkable accuracy. This enables businesses to optimize production schedules, adjust inventory levels accordingly, effective labour planning and avoid overproduction or stock outs, thereby reducing waste and minimizing the environmental impact of their operations.

Logistics optimization is another critical aspect of sustainable supply chains where AI brings significant benefits. AI algorithms can analyse various factors such as transportation routes, fuel consumption, vehicle capacity, and delivery schedules to optimize the logistics network. By finding the most efficient routes, consolidating shipments, and optimizing load distribution, AI-powered systems can minimize fuel consumption, reduce greenhouse gas emissions, and decrease the overall environmental impact of transportation operations.

In addition to operational efficiencies, AI has emerged as a disruptive technology and also enables effective risk mitigation in supply chain management. By continuously monitoring and analysing various data sources, including weather patterns, political events, and supplier performance, AI algorithms can identify potential disruptions and risks.

By leveraging AI technologies, supply chain professionals can extract valuable insights from large volumes of data, automate processes, optimize resource utilization, and make data-driven decisions, thus improving the overall sustainability performance of supply chains.

1.1.Rationale:

The rationale behind this research lies in the recognition of the significant challenges faced by supply chains in achieving sustainability objectives and the potential of Artificial Intelligence (AI) to address these challenges. AI algorithms and machine learning techniques can analyze vast amounts of data, identifying patterns, trends, and correlations that drive data-driven decision-making for sustainability. By integrating AI into sustainable supply chains, there is an

opportunity to optimize resource utilization, enhance supply chain visibility, and improve decision-making processes, ultimately leading to more efficient and environmentally responsible supply chain operations. The advanced data analysis, pattern recognition, and decision-making capabilities of AI offer opportunities to enhance sustainability practices within supply chains. While previous studies have explored AI applications in supply chain management and sustainability separately, there remains a gap in understanding the specific ways in which AI can contribute to enhancing sustainability within supply chains.

The findings of this research have practical implications for practitioners, policymakers, and researchers interested in leveraging AI technologies for sustainable supply chain management.

By conducting this research, it opens avenues for future research in the field of AI and sustainable supply chains. The findings may identify areas that require further investigation, highlight potential challenges that need to be addressed, and inspire new research directions to continuously advance the integration of AI technologies in achieving sustainability goals within supply chains.

1.2.Research Objectives:

Firstly, AI aims to optimize resource utilization within the supply chain network. By analysing data and patterns, AI can identify areas of inefficiency and propose strategies to minimize waste and maximize the efficient use of resources such as energy, water, and raw materials. The objective is to reduce the overall environmental impact of the supply chain by promoting resource efficiency.

Secondly, AI contributes to improving supply chain visibility. Through real-time monitoring and data analysis capabilities, AI technologies provide organizations with greater transparency and traceability across their supply chains. This visibility allows companies to identify potential environmental and social impacts associated with their supply chain operations.

Thirdly, AI enhances decision-making in the context of sustainable supply chains. By analysing vast amounts of data from multiple sources for supplier identification, for optimization of logistics and for demand forecasting. AI algorithms can identify patterns, trends, and

correlations that inform sustainable decision-making. The objective is to leverage AI's predictive and prescriptive capabilities to drive efficient and environmentally responsible supply chain operations.

1.3.Research Questions:

1. How does AI contribute to decision-making in the context of sustainable supply chains?
2. What are the impacts of AI-driven decision-making on waste reduction, emissions reduction, and overall sustainability performance in supply chains?
3. What are the potential benefits, roles and challenges of implementing AI-driven sustainability initiatives in supply chains?
4. How does improved supply chain visibility through AI facilitate the identification and mitigation of environmental and social impacts?

2. Literature Review

2.1.Overview of AI and Sustainable Supply Chain Management:

AI encompasses various technologies, including machine learning, natural language processing, robotics, and computer vision. Machine learning, in particular, enables AI systems to learn from data and improve their performance over time without explicit programming. (Russell, 2016). Within the context of supply chain management, AI technologies provide capabilities such as data analytics, predictive modelling, pattern recognition, optimization algorithms, and cognitive computing. These concepts form the foundation for AI applications in supply chain management, enabling organizations to analyse large volumes of data, identify patterns and trends, make informed decisions, and optimize supply chain processes (Nilsson, 2014).

Sustainability in supply chains encompasses the pursuit of environmentally responsible operations, ethical sourcing, fair labour practices, community engagement, and the promotion of long-term economic viability. Sustainable supply chain practices aim to minimize negative environmental and social impacts, promote resource efficiency, and ensure the well-being of

stakeholders along the supply chain (Seuring, 2008). Key sustainability concepts in supply chains include life cycle assessment, circular economy principles, green procurement, responsible sourcing, carbon footprint reduction, and social impact assessment. Organizations adopt sustainability practices in their supply chains to comply with regulatory requirements, meet customer expectations, enhance brand reputation, reduce costs, and contribute to global sustainability goals, such as the United Nations' Sustainable Development Goals (SDGs). (Sarkis, 2011). AI enables organizations to analyse complex supply chain data, identify inefficiencies, optimize processes, and make data-driven decisions that minimize environmental impacts and promote resource efficiency (Wu, 2020).

AI can facilitate sustainable sourcing and ethical supply chain management by analysing supplier data, monitoring compliance, and promoting responsible sourcing practices. It also enables organizations to improve demand forecasting accuracy, optimize inventory levels, reduce waste, and enhance energy management through predictive analytics and machine learning algorithms. Furthermore, AI can enhance transparency, traceability, and accountability throughout the supply chain, enabling organizations to monitor and mitigate social and environmental risks. (Gunasekaran, 2017). Robotics, machine learning, natural language processing, and other fields of technology are all included in artificial intelligence (AI), which enables robots to simulate human intelligence. With the use of these technologies, machines may mimic human intellect, gather knowledge from data, decide for themselves, and carry out activities.

2.2.The Role of Artificial Intelligence in Enhancing Supply Chain Sustainability

AI-driven applications offer promising opportunities to optimize supply chain processes, improve decision-making, and address environmental, social, and economic challenges. This section delves into the multifaceted role of AI in enhancing supply chain sustainability, focusing on its applications, sustainability practices, and the impacts it can have on both environmental and social-economic dimensions.

2.3.AI Applications in Supply Chain Management

Artificial intelligence (AI) applications have transformed supply chain management, providing advanced capabilities to optimize processes, enhance decision-making, and improve overall supply chain performance. This section explores various AI applications in supply chain management, highlighting their potential benefits and contributions to supply chain sustainability (Kourentzes, 2019).

a) Demand forecasting:

AI algorithms can analyse historical sales data, market trends, and external factors (e.g., weather patterns, economic indicators) to provide accurate demand forecasts. By leveraging machine learning techniques, AI can continuously learn and adapt to changing patterns, leading to more precise demand forecasting. This enables organizations to optimize inventory levels, minimize waste, and enhance resource efficiency. (Chen &. W., 2019).

b) Inventory management:

AI-powered algorithms can optimize inventory levels by analysing data on product demand, lead times, supplier performance, and supply chain constraints (Li, 2018). These algorithms consider various factors, such as seasonality, demand variability, and order fulfilment requirements, to determine the optimal inventory levels. By improving inventory management, AI helps organizations reduce excess inventory, minimize carrying costs, and enhance overall supply chain efficiency (Chen, 2021) .

c) Transportation optimization:

AI algorithms enable organizations to optimize transportation routes, modes, and scheduling based on factors such as cost, time, and carbon emissions. By analysing historical and real-time data on shipments, traffic patterns, and delivery constraints, AI can identify the most efficient transportation options. These results in reduced transportation costs, improved delivery efficiency and minimized environmental impact by optimizing fuel consumption and carbon emissions. (Tofigh, 2019).

d) Supplier selection and management:

AI technologies can analyse large volumes of supplier data, performance metrics, sustainability criteria, and risk factors to support responsible supplier selection and management. AI algorithms can assess supplier compliance with environmental and social standards, evaluate performance indicators (e.g., delivery reliability, quality metrics), and identify potential risks. This enables organizations to make informed decisions regarding supplier relationships, promoting ethical sourcing practices and supporting sustainable supply chain operations. (- Bai, 2019).

e) Quality control and defect detection:

AI-powered image recognition and machine learning algorithms can detect defects in products and materials, ensuring adherence to quality standards and minimizing waste. By analysing visual data, AI algorithms can quickly identify product defects, such as scratches, dents, or colour variations. This enables organizations to take immediate corrective actions, improve product quality, and reduce rework or product returns. (Zhang, 2020).

f) Risk management:

AI algorithms can help organizations identify and mitigate risks across the supply chain. By analyzing data from multiple sources, including supplier performance, market conditions, and external factors, AI can identify potential risks, such as supply disruptions, price fluctuations, or regulatory changes. This allows organizations to develop risk mitigation strategies, improve supply chain resilience, and ensure continuity of operations. (Ivanov, 2020).

g) Real-time analytics and decision-making:

AI enables real-time data analysis and decision-making by processing and interpreting large volumes of data from various sources. By utilizing machine learning algorithms, AI systems can provide actionable insights, identify patterns, and recommend optimal decisions. This empowers organizations to make informed and timely decisions, addressing supply chain challenges, and improving overall operational efficiency. (Zheng, 2019)

2.4.AI-Driven Sustainability Practices and Initiatives:

Artificial intelligence (AI) technologies offer significant potential for driving sustainability practices and initiatives within supply chains. By harnessing the power of AI, organizations can enhance their environmental, social, and economic sustainability efforts. This section explores various AI-driven sustainability practices and initiatives, highlighting their potential benefits and contributions to supply chain sustainability.

a) Energy management and optimization:

AI-powered analytics and optimization algorithms can analyze energy consumption patterns and identify opportunities for energy-saving and optimization in supply chain operations. By leveraging historical and real-time data, AI systems can identify areas of energy inefficiency and recommend strategies to improve energy management. These strategies may include optimizing production schedules, equipment utilization, and energy distribution, as well as implementing energy-efficient technologies and practices. AI-driven energy management and optimization practices help organizations reduce energy consumption, lower costs, and minimize their environmental footprint. (Hossain &. R., 2020).

b) Waste reduction and recycling:

AI technologies enable organizations to analyse large volumes of data to identify waste generation points, optimize waste management processes, and promote recycling initiatives. By analyzing production data, product lifecycle information, and waste disposal records, AI algorithms can identify opportunities for waste reduction, recycling, and circular economy practices. AI can help organizations optimize material usage, minimize waste generation, and identify recycling and reusing opportunities. These initiatives contribute to reducing waste sent to landfills, conserving resources, and promoting sustainable materials management. (Staniškis, 2020).

c) Responsible sourcing and supply chain transparency:

AI technologies enable organizations to enhance supply chain transparency and ensure responsible sourcing practices. By analysing supplier data, certifications, and external sources of information, AI algorithms can assess supplier compliance with environmental and social

standards. AI can help organizations identify risks related to responsible sourcing, such as human rights violations, unethical labor practices, or environmental harm. By promoting supply chain transparency and responsible sourcing, organizations can build trust with customers, meet regulatory requirements, and support sustainable supply chain practices. (Jia, 2021).

d) Risk mitigation and supply chain resilience:

AI technologies can help organizations identify and mitigate risks across the supply chain, contributing to supply chain resilience and sustainability. By analysing a variety of data sources, such as supplier performance, market conditions, weather patterns, and geopolitical factors, AI algorithms can detect potential risks and disruptions. These initiatives enhance supply chain resilience, reduce the negative impacts of disruptions, and help organizations maintain sustainable operations. (Ngai, 2018).

e) Social impact assessment and labour conditions:

AI can play a crucial role in assessing social impacts within supply chains and improving labour conditions. By analysing various data sources, including worker feedback, supplier data, and external information, AI algorithms can assess labour conditions, worker well-being, and social compliance (Choudhary, 2021). AI can identify potential risks related to worker safety, fair wages, or ethical labour practices. Organizations can use AI-driven systems to monitor and improve labour conditions, ensure compliance with labour standards, and promote social responsibility within their supply chains. (Arslan, 2021)

f) Circular economy and product lifecycle management:

AI technologies facilitate the implementation of circular economy practices and optimize product lifecycle management. By analysing product usage data, customer feedback, and lifecycle information, AI algorithms can provide insights into product design, material selection, and end-of-life management. AI-driven systems can identify opportunities for product redesign, component reuse, or material recycling. This helps organizations transition towards circular economy principles, reduce waste, and optimize resource utilization throughout the product lifecycle. (Geng, 2020)

2.5.Impact of AI on Environmental Sustainability in Supply Chains:

The integration of artificial intelligence (AI) technologies in supply chains has the potential to significantly impact environmental sustainability. This section explores the various ways in which AI can contribute to environmental sustainability in supply chains, including resource optimization, carbon footprint reduction, environmental risk assessment, and sustainable product design.

a) Resource optimization:

AI algorithms can optimize resource utilization within supply chains by analysing data and identifying areas of inefficiency. By leveraging machine learning and data analytics, AI can optimize processes such as production, inventory management, and transportation, leading to reduced resource consumption and waste. This enables organizations to minimize waste, improve energy efficiency, and enhance overall resource productivity. (Zhu, 2020).

b) Carbon footprint reduction:

AI technologies can contribute to the reduction of carbon emissions in supply chains. By optimizing transportation routes, modes, and scheduling, AI algorithms can minimize fuel consumption and associated greenhouse gas emissions. AI-driven analytics can also identify energy-saving opportunities and recommend energy-efficient practices and reducing carbon foot prints.

c) Environmental risk assessment and mitigation:

AI can help organizations assess and mitigate environmental risks within their supply chains. AI can detect anomalies in environmental monitoring data, alerting organizations to potential pollution incidents or compliance violations. By providing real-time risk assessment and early warning systems, AI enhances environmental stewardship and enables organizations to take prompt actions to mitigate environmental risks (Agrawal, 2020)

d) Sustainable product design:

AI-powered simulations and modelling can optimize product design for environmental sustainability. AI can evaluate the environmental performance of different materials, identify

alternatives with lower environmental footprints, and optimize product design for energy efficiency, recyclability, and end-of-life considerations. AI-driven sustainable product design promotes the development of environmentally friendly products, enhances resource efficiency, and supports the circular economy principles. (Wang, 2020)

e) Waste reduction and circularity:

AI technologies play a crucial role in waste reduction and promoting circularity in supply chains. AI can analyse data on product returns and customer feedback to identify patterns and address issues that contribute to product waste. By implementing AI-driven waste reduction strategies, organizations can minimize landfill waste, conserve resources, and transition toward a circular economy.

By leveraging AI technologies, organizations can make significant strides in improving environmental sustainability within their supply chains. AI enables resource optimization, carbon footprint reduction, environmental risk assessment, sustainable product design, and waste reduction initiatives.

2.6.Impact of AI on Social and Economic Sustainability in Supply Chains:

The integration of artificial intelligence (AI) technologies in supply chains has far-reaching implications for social and economic sustainability. This section explores the various ways in which AI can contribute to social and economic sustainability in supply chains, including labor conditions, ethical sourcing, workforce optimization, customer satisfaction, and economic efficiency.

a) Labor conditions and worker well-being:

AI technologies can play a significant role in improving labor conditions and enhancing worker well-being within supply chains. By analyzing data on worker safety, health records, and job satisfaction, AI algorithms can identify potential risks and suggest measures to improve workplace conditions. For example, AI can monitor work environments in real-time, detect hazards, and provide alerts for potential accidents. AI-driven systems can also help organizations ensure compliance with labor regulations, such as working hours, fair wages, and

safe working conditions. By promoting safe and healthy work environments, AI contributes to social sustainability by safeguarding the rights and well-being of workers. (- Babin, 2020) (Hossain M. A., 2019)

b) Ethical sourcing and responsible supply chain practices:

AI technologies enable organizations to enhance ethical sourcing practices and promote responsible supply chain management. By analyzing supplier data, certifications, and external sources of information, AI algorithms can assess supplier compliance with ethical standards, such as human rights, environmental responsibility, and fair-trade practices. AI-driven systems can help organizations identify potential risks, such as child labor or unethical sourcing practices, and support the development of responsible supply chains. By integrating AI into supply chain management, organizations can uphold ethical standards, ensure transparency, and contribute to social sustainability.

c) Workforce optimization:

AI can optimize workforce allocation and scheduling, leading to improved efficiency and better utilization of human resources. By analyzing data on workforce availability, skills, and performance, AI algorithms can recommend optimal staffing levels, shift patterns, and task assignments. This enhances workforce productivity, reduces labor-related costs, and improves employee job satisfaction. Additionally, AI technologies can facilitate training and skill development programs by identifying skill gaps and suggesting appropriate training modules. By optimizing workforce management, AI promotes economic sustainability by maximizing productivity and minimizing labor-related inefficiencies. (Mithas, 2020)

d) Customer satisfaction and personalized experiences:

AI technologies can enhance customer satisfaction and provide personalized experiences within supply chains. By analyzing customer data, purchase history, and preferences, AI algorithms can generate insights that enable organizations to tailor products and services to individual customer needs. This includes personalized recommendations, targeted marketing campaigns, and customized product configurations. By leveraging AI, organizations can improve customer satisfaction, loyalty, and retention. This, in turn, contributes to economic sustainability by

driving repeat business and fostering long-term customer relationships. (Chen, AI-Driven Personalization in Omnichannel Retailing: A Systematic Literature Review and Future Research Directions, 2021)

e) Economic efficiency and supply chain performance:

AI-driven optimization and decision-making algorithms can improve economic efficiency and overall supply chain performance. By analyzing vast amounts of data, AI systems can identify patterns, trends, and correlations that inform strategic decision-making. This includes optimizing inventory levels, demand forecasting, transportation routing, and supplier selection. AI can help organizations identify cost-saving opportunities, streamline processes, and reduce waste. By enhancing operational efficiency and cost-effectiveness, AI contributes to economic sustainability by improving profitability and competitiveness.

f) Data security and privacy:

AI technologies play a critical role in ensuring data security and privacy within supply chains. By implementing AI-driven cyber security measures, organizations can protect sensitive information, mitigate risks, and safeguard customer and stakeholder data. AI algorithms can detect anomalies and potential threats, enabling proactive cyber security measures. Additionally, AI can assist in compliance with data privacy regulations, such as the General Data Protection Regulation (GDPR), by anonymizing and protecting personal data. By prioritizing data security and privacy, AI supports ethical and responsible data management practices. (- Dubey, 2020)

The integration of AI in supply chains has a transformative impact on social and economic sustainability. AI technologies enable organizations to improve labor conditions, uphold ethical sourcing practices, optimize workforce management, enhance customer satisfaction, drive economic efficiency, and ensure data security. By leveraging AI, organizations can create more sustainable supply chains that balance social, economic, and environmental considerations.

2.7.Challenges and Risks of AI Implementation:

a) Data Privacy and Security:

The implementation of AI in supply chain management involves the collection and analysis of vast amounts of data. This raises concerns about data privacy and security. Companies need to ensure that sensitive information, such as customer data or proprietary business information, is protected from unauthorized access or breaches. Adequate data governance frameworks and security measures should be in place to mitigate the risks associated with AI implementation (Kiron et al., 2020; Kannan et al., 2021).

b) Ethical Considerations and Social Responsibility:

AI technologies raise ethical considerations in supply chain management. The use of AI algorithms in decision-making processes can result in biased outcomes or reinforce existing inequalities. It is crucial to ensure fairness, transparency, and accountability in AI systems to avoid unintended negative consequences. Additionally, companies should consider the social and ethical implications of AI implementation, including the impact on employment, job displacement, and social responsibility (Machado et al., 2019; Verma et al., 2022).

c) Workforce Implications and Training Needs:

The integration of AI in supply chain management may require new skill sets and capabilities from the workforce. Companies need to assess the impact of AI on job roles, identify skill gaps, and provide adequate training and development opportunities. Workforce engagement and change management strategies are crucial for successful AI implementation. Moreover, the ethical use of AI should be emphasized to ensure the well-being of employees and the responsible use of technology (Fan et al., 2020; Li et al., 2021).

In last, AI technologies offer numerous benefits for sustainable supply chain management, including improved demand forecasting, optimized logistics, efficient resource utilization, and enhanced supplier relationship management. However, challenges such as data privacy and security, ethical considerations, and workforce implications need to be addressed to maximize the potential of AI in achieving sustainable supply chain goals.

2.8.Strategies for Successful Implementation of AI in Sustainable Supply Chains:

The successful integration of Artificial Intelligence (AI) technologies in sustainable supply chains requires careful planning, effective frameworks, and a strategic approach. This section delves into key strategies for the successful implementation of AI to enhance sustainability practices in supply chains. It explores frameworks for integrating AI and sustainability, identifies key success factors, emphasizes stakeholder engagement and collaboration, discusses change management and overcoming resistance, and highlights ethical considerations in responsible AI implementation.

a) Frameworks for Integrating AI and Sustainability:

To ensure the effective integration of AI and sustainability within supply chains, organizations can adopt established frameworks that guide the implementation process. These frameworks provide a structured approach to incorporating AI technologies while considering sustainability objectives. Notable frameworks include:

1. **Triple Bottom Line (TBL) framework:**

The TBL framework emphasizes the integration of environmental, social, and economic considerations in decision-making processes. When implementing AI technologies, organizations can align their actions with the TBL principles to ensure that sustainability goals are addressed holistically. This framework serves as a guide for organizations to balance their economic goals with social and environmental responsibilities, while leveraging AI to optimize supply chain performance.

2. **Sustainable Development Goals (SDGs):**

The SDGs provide a global framework for sustainable development endorsed by the United Nations. By mapping AI initiatives to specific SDGs, organizations can prioritize and align their efforts to contribute to broader sustainability objectives. This framework helps organizations to identify the SDGs which are most relevant to their supply chain operations and tailor their AI implementation strategies accordingly, thereby fostering sustainability at a global level.

3. **The AI Sustainability Maturity Model:**

The AI Sustainability Maturity Model offers a comprehensive roadmap for organizations to assess their current level of AI implementation and guide them towards higher levels of sustainability maturity. It enables organizations to evaluate their AI capabilities and sustainability practices across various dimensions, such as data management, stakeholder engagement, and ethical considerations. This model facilitates the identification of gaps and opportunities for improvement, supporting the development of strategies that effectively integrate AI and sustainability. (Elkington, 1999) (Nations, 2015)

b) Key Success Factors for AI Implementation in Supply Chains:

The successful implementation of AI in supply chains for sustainability relies on several key success factors. These factors are crucial for organizations seeking to effectively leverage AI technologies to enhance their sustainability practices. Notable key success factors include:

1. Leadership commitment and vision:

Top-level management plays a pivotal role in driving AI implementation for sustainability. Demonstrating strong commitment and vision, leaders can set the strategic direction and create a supportive organizational culture that encourages the integration of AI technologies and aligns with sustainability objectives. Leadership commitment ensures the necessary resources, investments, and prioritization is provided to support the successful implementation of AI in supply chains.

2. Data quality and availability:

AI algorithms heavily rely on high-quality data. Therefore, organizations must invest in data collection, management, and integration processes to ensure the availability of accurate and comprehensive data for AI analysis and decision-making. Ensuring data quality and accessibility enables organizations to unlock the full potential of AI technologies and derive valuable insights that drive sustainable supply chain practices.

3. Technology infrastructure and capabilities:

Successful AI implementation necessitates a robust technological infrastructure and capabilities. Organizations must assess their existing IT systems and identify any gaps that may hinder the integration of AI technologies. Investing in the necessary infrastructure, such as

cloud computing resources and data storage capabilities, ensures that supply chains have the capacity to support AI-driven initiatives effectively. Additionally, organizations should build the required technical capabilities by recruiting or training professionals skilled in AI and supply chain management.

4. **Talent and skills development:**

AI implementation requires a skilled workforce capable of effectively leveraging AI technologies. Organizations should prioritize talent and skills development programs that equip employees with the necessary knowledge and competencies. This includes investing in training initiatives, fostering collaborations with academic institutions, and establishing partnerships to stay abreast of the latest AI developments and best practices. Developing a capable workforce ensures that employees are prepared to leverage AI tools and contribute to sustainable supply chain practices. (Chae, 2005) (Fosso Wamba, 2020)

c) Stakeholder Engagement and Collaboration:

Successful AI implementation in sustainable supply chains necessitates active engagement and collaboration with various stakeholders. Organizations should involve suppliers, customers, employees, and other relevant stakeholders throughout the process. Key actions to foster stakeholder engagement and collaboration include:

1. **Supplier collaboration:**

Engaging suppliers in sustainability initiatives and encouraging their adoption of AI technologies enhances transparency, responsible sourcing practices, and sustainability performance throughout the supply chain. By collaborating closely with suppliers, organizations can share information, align sustainability goals, and collectively develop strategies that leverage AI for sustainable supply chain practices.

2. **Customer engagement:**

Engaging customers in sustainability efforts and communicating the use of AI technologies to drive sustainable practices can create a positive brand image and foster customer loyalty. Organizations can involve customers in sustainability initiatives through communication channels, feedback mechanisms, and initiatives that promote responsible consumption and environmental awareness.

3. **Cross-functional collaboration:**

Collaboration across departments within the organization, such as supply chain, IT, sustainability, and operations, is vital for the successful implementation of AI technologies in sustainable supply chains. Cross-functional collaboration ensures that sustainability goals are integrated into AI initiatives, that the technology aligns with overall business objectives, and that diverse perspectives contribute to decision-making processes. Effective communication channels and cross-functional teams facilitate the integration of AI and sustainability practices throughout the organization. (Walker, 2008) (Chain Management Practices)

d) Change Management and Overcoming Resistance:

The implementation of AI technologies in supply chains for sustainability requires effective change management practices to address potential resistance and ensure smooth adoption. Key considerations for successful change management include:

1. **Change readiness assessment:**

Organizations should assess their readiness for change, identify potential barriers, and develop strategies to overcome resistance. Conducting change impact assessments helps anticipate the potential effects of AI implementation on employees, processes, and organizational structures. By proactively addressing concerns about job displacement, privacy and data security, and the impact on employees, organizations can facilitate smoother adoption of AI technologies.

2. **Training and up skilling:**

Providing training programs and up skilling opportunities for employees is crucial to ensure they have the necessary knowledge and skills to work with AI technologies. Organizations should develop comprehensive training plans that cover AI fundamentals, specific AI tools and applications, and ethical considerations. Up skilling programs enable employees to adapt to

new roles and responsibilities resulting from AI implementation, fostering a supportive environment for sustainable supply chain practices.

3. **Communication and transparency:**

Open and transparent communication is essential for successful AI implementation. Organizations should clearly communicate the purpose, benefits, and impacts of AI implementation, emphasizing its alignment with sustainability goals. Transparent communication channels should be established to address concerns, provide regular updates on progress, and involve employees in decision-making processes. Open dialogue fosters trust, reduces resistance, and cultivates a positive organizational culture conducive to the integration of AI and sustainability. (Beer, 2000) (Armenakis, 2002)

3. Methodology

3.1. Research Design:

The research design for this qualitative approach will involve conducting a literature review using various sources such as Google, research papers, and articles. The goal is to gather relevant information and insights on the research topic or question.

3.2.Data Collection and Sources:

The data collection process will involve searching and gathering data from multiple sources, including Google, research papers, and articles. The following steps can be taken:

a) **Google Search:**

Conduct a comprehensive search on Google using relevant keywords and phrases related to the research topic. Explore different types of sources, including websites, blogs, news articles, and online forums. Evaluate the credibility and relevance of each source before including it in the data collection.

b) **Research Papers:**

Access academic databases and libraries to find scholarly research papers related to the research topic. Use platforms such as Google Scholar, PubMed, or IEEE Xplore to search for relevant studies. Analyse the abstracts, methodology, and results sections of the papers to extract valuable information.

c) Articles:

Explore reputable online publications, journals, and magazines to identify articles that discuss the research topic. Look for sources that provide in-depth analysis, expert opinions, or case studies related to the subject. Evaluate the credibility and reliability of the articles before incorporating them into the data collection.

3.3.Data Analysis Approach:

Once our data collection phase has been completed, the next step was to analyse the gathered data. The qualitative data analysis approach involves the following steps:

a) Coding:

Start by reading through the collected data and assigning codes or labels to different sections or segments. Codes represent meaningful concepts or themes related to the research Objectives.

b) Categorization:

It is advised to group similar codes or categories together to identify broader themes or patterns in the data. Look for commonalities, differences, and relationships between different codes or categories. This process helps us in identifying key findings and generating meaningful insights.

c) Interpretation:

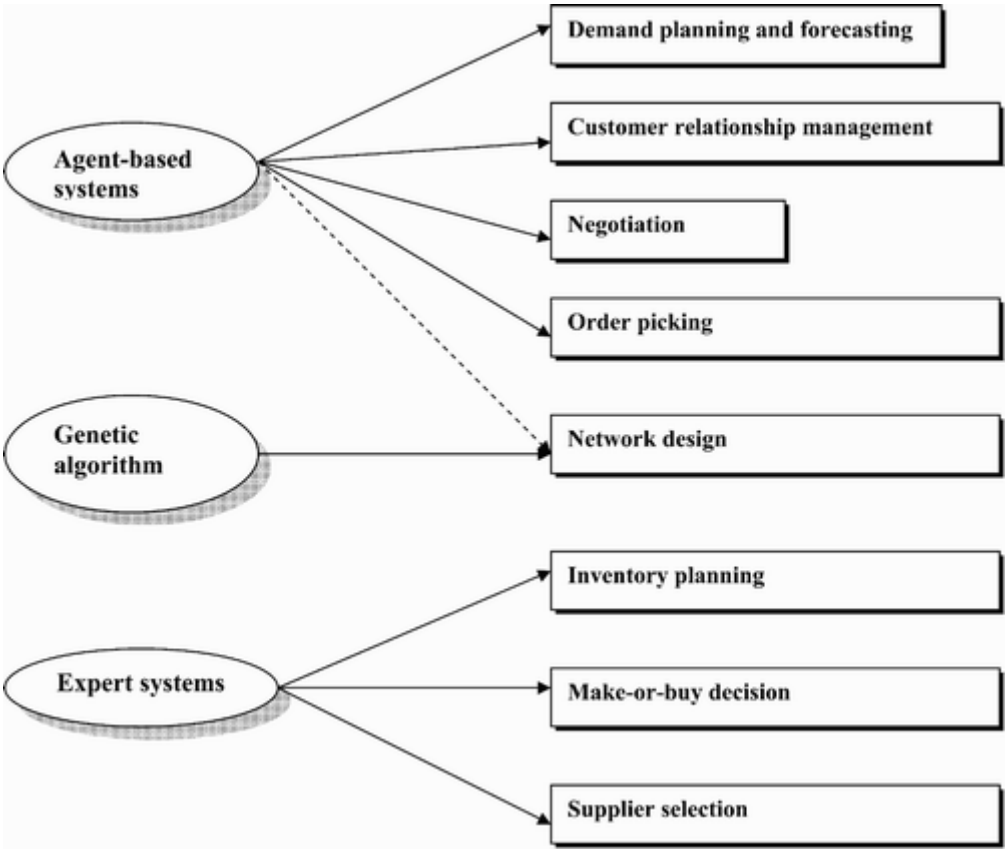
Once the data has been categorized into themes and patterns, interpret the findings in the context of the research Objectives. Analyse the relationships between different themes and explore their implications.

4. Discussion and Analysis

4.1.Application of AI in Sustainable Supply Chain Practices:

The application of artificial intelligence (AI) in sustainable supply chain practices has gained significant attention in recent years. AI technologies, such as machine learning and data analytics, offer numerous benefits for improving sustainability in supply chains, including enhancing efficiency, reducing waste, and mitigating environmental impacts.

The growing management philosophy of SCM, which demands the comprehension of complex, linked decision-making processes and the construction of intelligent knowledge bases critical for cooperative problem-solving, is one area of AI's potential applicability that has not yet been extensively explored. Expert systems, for example, offer a potential new solution to large-scale and complicated inventory control and planning challenges due to its rich knowledge representation language, which is capable of capturing inventory trends over the whole SC at all levels of detail. The incorporation of such dynamic complexity into the inventory data base allows human specialists, such as inventory managers, to estimate the optimum amount of inventory at each stocking point without generating a bullwhip effect. (Min,2009) **Link *between popular AI tools and their SCM applications areas*:**



4.2.Case Studies and Examples:

Several case studies and examples highlight the successful implementation of AI in sustainable supply chain practices.

Case Company Walmart, one of the world's largest retailers, implemented AI algorithms to optimize its trucking operations, resulting in significant fuel savings and reduced emissions (Arnzen et al., 2019). AI-based predictive analytics have also been employed to optimize inventory management, demand forecasting, and route planning, leading to reduced waste and improved efficiency (Wamba et al., 2020).

Another notable example is the application of AI in the fashion industry. Companies like H&M and Adidas have utilized AI to optimize production processes, reduce waste, and promote sustainable sourcing practices. AI algorithms analyse consumer data, market trends, and

supplier information to make informed decisions about production quantities, materials sourcing, and transportation logistics, thereby minimizing environmental impact (Kuo et al., 2021).

Certainly! Here are additional examples and case studies that demonstrate the application of AI in sustainable supply chain practices:

1. **Case Study: Maersk Line**

Maersk Line, one of the world's largest container shipping companies, utilized AI and machine learning algorithms to optimize vessel routing and reduce fuel consumption. By analysing factors such as weather conditions, sea currents, and vessel performance data, Maersk Line was able to optimize routes and reduce carbon emissions by 8-10% (Garg et al., 2021).

2. **Case Study: Nestlé**

Nestlé, a global food and beverage company, implemented AI-driven predictive analytics to optimize demand forecasting and reduce waste in its supply chain. By analyzing historical sales data, market trends, and external factors, Nestlé improved demand accuracy, leading to reduced stock outs and overstock situations, ultimately minimizing waste and improving sustainability (Gavirneni et al., 2020).

3. **Case Study: Coca-Cola**

Coca-Cola used AI and data analytics to optimize its distribution network and reduce carbon emissions. By analysing data on product demand, transportation costs, and fuel consumption, Coca-Cola optimized delivery routes, vehicle loading, and inventory placement, resulting in reduced transportation costs, fuel consumption, and greenhouse gas emissions (Kleindorfer et al., 2020).

These case studies demonstrate how AI is being applied in various industries to achieve sustainable supply chain practices, including optimization of routes and fuel consumption, demand forecasting and waste reduction, sustainable sourcing, and product lifecycle management. By leveraging AI technologies, companies can enhance their sustainability performance and contribute to environmental and social responsibility goals.

4.3 An integrated model of boundary conditions for sustainable AI:

The following model began with a wide overview of the literature and offered the results based on it. The research community's conscious conceptualization of sustainable AI, and it was followed by a more focused discussion of the FSSD's boundary criteria for social sustainability. In order to operationalize the boundary criteria for public sector AI decision-making, the model concluded by examining how each boundary condition is mirrored in the larger discussion concerning AI and society.

An integrated model of boundary conditions for sustainable AI.

Boundary conditions	Corresponding concepts	Criteria for preservation	Operational approaches[a]	Guiding questions
Diversity	Inclusive participation	• All stakeholders affected by or interacting with the AI system • Emphasis on stakeholders with traditionally limited access	• National level multi-stakeholder dialogues and assemblies • National commissions for regulation or trust-building • Deliberative processes • Inclusive impact assessments for AI	Does the design and implementation of AI incorporate the views and needs of all affected stakeholder groups?
Capacity for learning	Transparency and Explainability	• Discoverability and unknowability of process	• Inclusive audits of AI systems • Participatory technology assessments • Systematic disclosure systems • External knowledge brokers	Do people who are affected understand how it works and what the outcomes are?
Capacity for self-organization	Agency, Consent, and Accountability	• AI are subject to democratic principles and institutions • In regard to design, implementation, and monitoring phases	• Grievance and complaint mechanisms • Informed consent • Toolkits for non-expert engagement • Systematic disclosure systems	Do people know they are using it? Are affected stakeholders invited to engage in design and review of AI is implemented? Is there a clear complaint mechanism for affected stakeholders?
Common meaning	Embedded values	• Understanding which values are represented by AI systems? • Identifying the values held by society and by affected stakeholder groups	• Society in the loop o Facilitated social debate on values • Human controllers that oversee and update AI systems	Does the implementation of AI match the values held by affected stakeholder groups and society in general?
Trust	Appropriate and systemic trust	• Trust is defined by those who actively choose to trust AI systems. • Trust is deserved	• Alternative platforms for informed consent • Trust mediators • National institutions for trust-building	Should people trust the AI at issue?

4.3.Impact of AI on Supply Chain Efficiency and Waste Reduction:

The integration of AI in supply chain operations has shown significant potential for improving efficiency and reducing waste. AI-powered algorithms can analyse vast amounts of data from multiple sources in real-time, enabling better demand forecasting, inventory optimization, and dynamic pricing strategies (Liang et al., 2018). These results in reduced inventory holding costs, minimized stock outs, and improved customer satisfaction.

Moreover, AI can optimize transportation and logistics operations, leading to reduced fuel consumption, lower emissions, and improved delivery routes (Arntzen et al., 2019). AI algorithms can consider various factors, such as traffic patterns, weather conditions, and delivery constraints, to optimize route planning and minimize empty miles.By reducing inefficiencies and waste in supply chain operations, AI contributes to sustainability goals by minimizing resource consumption, lowering greenhouse gas emissions, and promoting circular economy principles.

4.4.AI-Driven Decision-Making and Optimization:

AI-driven decision-making and optimization techniques are instrumental in enhancing sustainable supply chain practices. AI algorithms can process vast amounts of data and perform complex analyses to support decision-making processes. For instance, machine learning models can analyse historical data on supplier performance, quality issues, and sustainability metrics to identify patterns and predict supplier risks (Li et al., 2020). This enables companies to make informed decisions about supplier selection, fostering sustainable sourcing practices.

Furthermore, AI can optimize production scheduling, resource allocation, and energy management in manufacturing processes. By continuously monitoring and analyzing data from IoT sensors and equipment, AI algorithms can identify inefficiencies, recommend process improvements, and reduce energy consumption (Wamba et al., 2020).

4.5.Environmental Impact Mitigation through AI:

The use of AI in sustainable supply chain practices offers significant opportunities for mitigating environmental impacts. AI algorithms can identify areas of improvement and recommend changes to reduce carbon emissions, water usage, and waste generation. For example, AI can analyse energy consumption patterns in warehouses and distribution centres, suggesting energy-saving measures such as lighting upgrades, equipment optimizations, and temperature control systems (Liang et al., 2018).

AI can also support circular economy initiatives by optimizing product lifecycle management, enabling better tracking and monitoring of products throughout their entire lifecycle. This facilitates efficient reuse, remanufacturing, and recycling processes, minimizing waste and maximizing resource utilization (Kuo et al., 2021).

4.6.Addressing Ethical Concerns and Ensuring Data Privacy:

The adoption of AI in sustainable supply chain practices raises important ethical concerns and data privacy issues. As AI systems rely on vast amounts of data, companies must ensure the ethical collection, storage, and use of data. It is crucial to establish transparent data governance frameworks, obtain proper consent from stakeholders, and implement robust security measures to protect sensitive information (Wamba et al., 2020).

Additionally, AI algorithms must be designed and trained to avoid bias and discrimination. Careful consideration should be given to the data used for training AI models to ensure fairness and avoid perpetuating social inequalities (Arntzen et al., 2019).

4.7.The Role of AI in Social Responsibility and Sustainable Sourcing:

AI plays a significant role in promoting social responsibility and sustainable sourcing practices. By leveraging AI technologies, companies can effectively trace and monitor their supply chains to ensure compliance with labour standards, human rights, and environmental regulations (Li et al., 2020). AI-powered systems can track the origin of raw materials, assess supplier practices, and identify potential risks related to social and environmental issues.

Moreover, AI can facilitate transparency and communication with consumers. Block chain technology combined with AI enables companies to provide verifiable information about product origins, ethical sourcing practices, and environmental footprints (Kuo et al., 2021). This empowers consumers to make informed purchasing decisions aligned with their sustainability values.

5. Findings

Numerous studies and case studies demonstrate the effectiveness of AI in enhancing sustainability performance, including improving efficiency, reducing waste, mitigating environmental impacts, and promoting social responsibility. AI-driven decision-making and optimization techniques enable companies to make informed choices, optimize processes, and address sustainability concerns. However, the literature also highlights challenges and risks associated with AI implementation, such as ethical concerns, data privacy issues, and the need for proper governance frameworks. To ensure successful AI adoption in sustainable supply chain practices, companies must carefully consider these factors and implement appropriate strategies.

5.1.Key Findings on the Effectiveness of AI in Sustainable Supply Chain:

The key findings on the effectiveness of AI in sustainable supply chain practices include:

a) Improved efficiency:

AI technologies such as machine learning and data analytics optimize various aspects of supply chain operations, including demand forecasting, inventory management, transportation logistics, and production scheduling. This leads to improved efficiency, reduced costs, and enhanced customer satisfaction (Liang et al., 2018).

b) Waste reduction:

AI algorithms enable accurate demand forecasting, resulting in optimized inventory levels and reduced waste from overstocking or stock outs. AI also facilitates better tracking and

monitoring of products, promoting circular economy principles and minimizing waste generation (Kuo et al., 2021).

c) Environmental impact mitigation:

AI supports sustainability goals by optimizing transportation routes, reducing fuel consumption, and minimizing carbon emissions. AI-driven energy management systems and resource allocation also contribute to environmental impact mitigation (Arntzen et al., 2019).

d) Social responsibility and sustainable sourcing:

AI enables companies to ensure compliance with labour standards, human rights, and environmental regulations throughout the supply chain. By tracking and tracing the origin of raw materials, AI promotes sustainable sourcing practices (Li et al., 2020).

The integration of AI in sustainable supply chain practices presents several opportunities and potential benefits, including:

e) Enhanced decision-making:

AI algorithms process vast amounts of data, enabling informed decision-making and optimization across the supply chain. This leads to improved efficiency, reduced costs, and better alignment with sustainability goals (Wamba et al., 2020).

f) Real-time visibility and transparency:

AI technologies provide real-time visibility into supply chain processes, facilitating transparency and accountability. This enables better tracking of products, ensuring compliance with sustainability standards, and meeting consumer demands for transparency (Kleindorfer et al., 2020).

g) Predictive analytics and risk management:

AI-powered predictive analytics help companies identify risks and opportunities, enabling proactive risk management. By analyzing historical data and identifying patterns, AI algorithms support sustainable sourcing decisions and supplier risk assessment (Gavirneni et al., 2020).

h) Continuous improvement:

AI systems can continuously monitor and analyze data from various sources, identifying inefficiencies and recommending process improvements. This leads to ongoing optimization and the ability to adapt to changing circumstances, promoting sustainable practices (Dutta et al., 2021).

5.2.Challenges and Risks of AI Implementation:

The implementation of AI in sustainable supply chain practices comes with challenges and risks, including:

a) Ethical concerns:

AI raises ethical concerns, such as bias in decision-making algorithms and potential negative impacts on employment. Companies must ensure fairness, transparency, and accountability in AI systems to address these concerns (Arntzen et al., 2019).

b) Data privacy and security:

The use of AI requires access to vast amounts of data, raising concerns about data privacy and security. Proper data governance frameworks and robust security measures are necessary to protect sensitive information (Wamba et al., 2020).

c) Organizational and cultural challenges:

Adopting AI technologies requires organizational change and cultural adaptation. Companies need to overcome resistance, foster a culture of innovation, and provide adequate training to employees (Liang et al., 2018).

d) Technical complexity and integration:

Implementing AI in supply chain operations requires technical expertise and integration with existing systems. Companies must invest in the right infrastructure and ensure compatibility with legacy systems (Gavirneni et al., 2020).

5.3.Recommendations for Successful AI Adoption in Sustainable Supply Chain:

To ensure successful AI adoption in sustainable supply chain practices, the following recommendations are proposed:

6. Conclusion

The research 's implications for practice highlight the opportunities and potential benefits of AI integration, including enhanced decision-making, real-time visibility, predictive analytics, and continuous improvement. To successfully adopt AI in sustainable supply chains, companies should develop clear strategies, invest in data quality and governance, foster collaboration, develop talent, and monitor performance. Future research should focus on addressing the challenges and risks associated with AI implementation and exploring new AI applications in sustainable supply chain practices.

The application of AI in sustainable supply chain practices offers numerous benefits, including improved efficiency, waste reduction, and environmental impact mitigation. AI-driven decision-making and optimization techniques enable companies to make informed choices, while addressing ethical concerns and ensuring data privacy is essential. Furthermore, AI plays a crucial role in promoting social responsibility and sustainable sourcing practices, allowing companies to demonstrate transparency and meet the expectations of environmentally and socially conscious consumers.

The research acknowledges certain limitations. First, the findings may be influenced by the specific contexts and characteristics of the case studies analysed. Second, the research primarily focuses on the positive aspects and potential benefits of AI in supply chain sustainability, with limited exploration of potential negative impacts and ethical considerations. Lastly, the study

does not account for the evolving nature of AI technologies and their rapid advancement, which may result in certain findings becoming outdated over time.

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EFL Learners' Translanguaging Processes While Getting Prepared for Their Speaking Tasks in Language Classes

Dr. Özlem KARAAĞAÇ TUNA
Pamukkale University, Türkiye
ORCID Number: 0000-0002-5410-2454

Abstract

The traditional monolingual practices in language teaching are being challenged and the use of the previously known languages as a precious resource while learning a foreign language has come forward lately. In the light of this, the present study aimed to look into the translanguaging processes of Turkish learners of English as they get prepared for their group speaking tasks in the speaking lessons. The instances learners rely on translanguaging and the reasons for using it were analyzed within this study. For this purpose, the learners were assigned in groups to get ready for speaking activities in the classroom and they were audio-recorded as they were planning the speaking tasks they were asked to carry out. These recordings were listened to by the learners as part of a stimulated recall process so that they could remember the instances they had made use of translanguaging and tell the reasons for doing so. While listening to the recordings, the learners were told that they were free to stop the recordings or re-play them whenever they needed to as they filled in the forms they had been given. The forms the learners filled in included questions asking about their reasons for using translanguaging during their study. The learners were also interviewed in order to learn more about the instances of translanguaging applied in speaking lessons and the causes underlying these instances.

Keywords: Translanguaging, Translanguaging in Speaking Classes, Translanguaging Processes.

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1. Introduction

'Naturam expelles furca, tamen usque recurret: like nature, the mother tongue (L1) creeps back in, however many times you throw it out with a pitch-fork' (Cook 2001, p.3). As it is put by Cook, even if it is tried hard to be avoided, the use of mother tongue, and in addition to it the languages learned previously seems to be inevitable in language classes. However, with the "influence of predominant national ideologies and language policies across different countries" (Wang, 2016, p.1), the dominance of the monolingual approaches in teaching a second language was strong while it is actually seen as "undesirable, unrealistic, and untenable" (Levine, 2011, p.70). In addition, the new research and scholars put forward that using the previously learned languages may even be useful rather than inhibiting the target language learning (Garcia & Wei, 2014; Wang, 2016).

In the past, while students or teachers were expected to use only the target language in foreign language classes, the use of mother tongue or the other previously learned languages was mostly seen as a taboo. However, this trend has been changing in recent years, and this change is largely supported by the concept of translanguaging, which has recently emerged in applied linguistics. Translanguaging is "the planned and systematic use of two languages for teaching and learning inside the same lesson" (Lewis, Jones, & Baker, 2012, p.643). With the concept of translanguaging, students and teachers are supported to benefit from their mother tongue and other languages known while learning or teaching a foreign language.

Translanguaging is a term that has emerged from the need for a new perspective to today's language teaching methods and techniques by linguists and therefore has been included in the field. This term actually covers the issue of individuals' learning a new language benefiting from their mother tongue or from different foreign languages they have learned before in the process of learning the new language (Nagy, 2018). For this purpose, the learners are expected to be able to apply for all their proficiency in previously known languages and benefit from this knowledge and experience. In this context, it is predicted that being able to benefit from more than one language in processing new information will have many benefits for both learners and teachers (Li Wei, 2018). This approach has aroused great interest among various researchers, and the term has been used as a pedagogical term to describe multilingual practices that involve making use of all linguistic resources in the

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language learning and teaching process (Cenoz & Gorter, 2017; García, Johnson & Seltzer, et al. 2017).

There are various explanations of translanguaging and considering them, it can be said that in addition to its efficacy in leading the learners to be able to understand the content better, make the communication easier and supporting a safer teaching environment, it is a phenomenon that happens naturally (Canagarajah, 2011), and that is used in order to enhance the learners' meaning making processes in language classes.

In line with the above-mentioned topic and scope, the aim of the present study is to examine the translanguaging processes of students in speaking classes during the foreign language learning process, which has recently come to the fore. In line with this aim, students' language switching processes and the reasons why they make these changes, and most importantly, whether it benefits them and if so, what kind of benefit it provides will be examined.

2. Methodology

In order to gather data for the present study, a stimulated recall process and interviews were applied as part of the qualitative method. Firstly, the students were assigned some speaking tasks to get prepared in groups and they were asked to voice-record themselves as they were preparing for the tasks. After this process was completed, the students were given a table asking them to write down the instances they used their mother tongue as part of translanguaging, and the reasons they did so. Following the stimulated recalls, the students were also interviewed on their uses of translanguaging and the reasons of it. The study aimed to answer the following research question:

1. What are the EFL learners translanguaging instances and their reasons for translanguaging as they are preparing a speech in speaking classes?

2.1. Setting and Participants

The study was carried out in the fall term of the 2022-2023 academic year at the School of Foreign Languages, Pamukkale University, Turkey.

A total of 22 learners studying English at the preparatory class have participated in the stimulated recall part of the present study while 50 learners took part in the interviews.

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2.2.Data Collection

Stimulated Recall

For the stimulated recall procedure, different tasks were prepared for the learners concerning the aim of the study, and an expert's view was asked on the tasks. When the tasks were ready, the learners were assigned into groups and they were asked to carry out each task in a different day. As the learners were getting prepared for their speaking tasks within their groups, they were voice recorded. After they finished their tasks, they were asked to listen to the recordings, and as they were listening, they were asked to fiil in a formprepared by the researcher. The table had parts where the students needed to take notes on the instances they made use of translanguaging, reasons for doing so, and if it helped them or not. The learners were informed about the stimulated recall procedures before they started.

Interviews

The semi-structured interview questions were prepared in accordance with the research question of the present study. There were three open ended questions asking about the instances the students make use of translanguaging in the speaking lessons during group works, why do they use it, if it is useful for them, and how.

After the questions were formulated, four different experts were asked for their opinions concerning the validity of the questions, and the interview questions were piloted by five students that are in a similar condition with the actual participants of the study.

2.3. Procedures for Data Collection and Analysis

Before the data collection procedure started, the participants were informed about the procedure of the study and they were asked for their consent. The participants for the interviews were chosen randomly, the interviews were recorded to be listened to for inductive content analysis.

The data from the stimulated recall procedure was also analyzed through inductive content analysis.

Another expert was asked to carry out the same procedure for the reliability of the results of the study.

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3. Results:

Research Question: What are the EFL learners translanguaging instances and their reasons for translanguaging as they are preparing a speech in speaking classes?

Results from the stimulated recall process:

Table 1
Codes for translanguaging instances of the learners during their preparation for the speaking tasks.

Codes for Translanguaging Instances	Total Turns
Lexical Difficulty	15
Scaffolding Friends	12
To gain time	9
Asking for Lexical Help	8
Keep the task going	4
Getting Attention	4
Task Management	3
Asking for Help to make a Sentence	3
To emphasize something	2
Grammar Deliberation	1
Asking for clarification	1

As it is seen in the table above, the most frequent reason for the learners in the present study to use translanguaging was the ”Lexical Difficulty” they had during their preparation for the speaking tasks they were assigned as a group. Some of the comments of the learners concerning the reasons for using their mother tongue for translanguaging are as follows:

L 1: “İngilizcesini bilmediğim için kullandım” [I used it because I did not know it in English]

L 23: “I did not know that word’s meaning, I know that word’s meaning now.”

L 4: “Aslında anlamını biliyorum ama aklıma gelmedi.” [I actually knew its meaning but I could not remember.)

L 30: “İngilizcesini unuttum.” I forgot it’s English meaning].

“Lexical Difficulty” is followed by “Scaffolding Friends” with the frequency of 12. The learners give the following reasons for using translanguaging for scaffolding their friends:

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L8: "Çünkü İngilicesini arkadaşlarım anlamadı, Türkçe anlatmak zorunda kaldım" [Because my friends did not understand the English version. I had to explain it in Turkish].

L17: "I said it in Turkish because the meaning of the word was not understood"

L23: "I used Turkish because I did not think that my friends understood it in English. It helped. We carried out the task after I said the Turkish meaning"

L8: "Arkadaşım bir şeyi anlamadığı için Türkçe açıkladım" [Since my friend did not understand something, I explained it in Turkish].

"To gain time" is the third most frequent reason for the learners to use translanguaging during their preparation for the speaking tasks they were assigned to do. Some of the explanations the learners make for this item are as follows:

L10: "Yes, it worked. I could tell it without losing time."

L17: "Aslında anlamını biliyordum ama kafamda yaptığım çeviri çok yavaş olduğu için Türkçesini kullandım. This speeded up the conversation." [Actually I knew the meaning but I used Turkish because the translation I was making was very slow).

L21: "I had to ask quickly."

After "to gain time", "Asking for Lexical Help" follows as a reason to use translanguaging in speaking lessons. An explanation made by one of the participant learners is given below:

L24: "Kelimenin İngilizcesini bulamadığım için Türkçesini sordum. Arkadaşlarım yardımcı oldu." [I asked the word in Turkish because I could not remember it in English. My friends helped me].

With the frequency of 4, two items; "Keep the task going" and "Getting Attention" follows. For "Keep the task going", one of the learners made the following explanation:

L10: "Saying it in English was very complicated. To continue, I had to use Turkish."

For the item "Getting Attention", the learners made the following explanations:

L26: "When I use English, I feel my friend does not listen to me. That's why I used Turkish. When I said it in Turkish, they all looked at me."

L10: "It worked because when I used Turkish, my friend paid attention to what I was saying. Otherwise, he would think I was just talking with others as part of the task."

L13: "I used Turkish to make my friends listen to me"

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After these two items, “Task Management” (N: 3), “Asking for Help to make a Sentence” (N:3), “To emphasize something” (N:2), “Grammar Deliberation” (N:1), and “Asking for clarification” (N:1) follow.

Results from the interviews:

Table 2

Codes for the reasons learners give for using translanguaging in the speaking classes.

Codes for Translanguaging Reasons	Frequency
To express oneself better	28
Lexical Difficulty	23
Asking for Help to make a Sentence	15
Asking for clarification	6
To keep the flow of speech	5
Difficulty in pronunciation	4
Scaffolding Friends	4
Asking for Lexical Help	4
To gain time	2
Task Management	1

As it is clearly shown in the table above, the most frequent reason to use translanguaging the learners give during the interviews was the need for them ”To express oneself better”. Some of the comments of the learners concerning this item are as follows:

L3: - Söylemek istediğimi İngilizce şekilde nasıl ifade edeceğimi bilmediğim zaman Türkçe kullanıyorum. [I use Turkish when I don't know how to express what I want to say in English.]

L7: Nasıl söyleyeceğimi bilmediğimde Türkçe konuşuyorum. [I speak Turkish when I don't know how to say it.]

L8: Tam kendimi ifade edememekten korkuyorum. [I am afraid of not being able to express myself.]

L22: Kendimi ifade edemediğim zamanlarda Türkçe kullanıyorum, o zaman arkadaşlarım ve öğretmenim beni anlıyorlar. [I use Turkish when I cannot express myself, then my friends and teacher understand me.]

L28: Kendimi daha iyi ifade edebilmek, sorunlarıma daha anlaşılır çözümler bulmak için Türkçe kullanırım. [I use Turkish to express myself better and to find more understandable solutions to my problems.]

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L34: Kendimi ifade etmekte zorlandığım ya da ifade edemediğim zaman ve heyecanlanıp bir şeyler söyleyemediğim zaman kullanıyorum. [I use it when I have difficulty in expressing myself or when I cannot express myself and when I get excited and can't say anything.]

L37: During the lessons, sometimes I want to express myself more understandably, and I think I need to tell something but sometimes I can't. That's why I use Turkish.

L46: Kendimi anlatamadığım bazı durumlarda Türkçe kullanıyorum. [I use Turkish in some situations that I cannot explain myself.]

The second frequent item as a result of the interviews is "Lexical Difficulty". The comments of the learners are as follows:

L5: Çünkü bazen kelimeler aklıma gelmiyor, o zaman Türkçesini kullanıyorum. [Because sometimes I cannot remember words, then I use Turkish.]

L16: Kelime eksiğim olduğu için zorlandığım zamanlarda kelimenin Türkçesini söylüyorum. [When I have difficulties because I lack the necessary knowledge of vocabulary, I say the Turkish of the word.]

L18: Türkçeye ihtiyaç duyuyorum çünkü kelime bilgim çok geniş değil. [I need Turkish because my vocabulary knowledge is not extensive enough.]

L33: Cümle kurarken bilmediğim ya da hatırlayamadığım kelimeleri Türkçe söylüyorum. [While making sentences, I use Turkish to say words that I do not know or cannot remember.]

L48: Bir cümle kurarken zorlanıyoruz. Bunun yerine hemen Türkçe kelimelere ihtiyaç duyuyoruz. [We have a hard time forming a sentence. Instead, we immediately need Turkish words.]

Following "Lexical Difficulty", "Asking for Help to make a Sentence" is expressed to be a reason to apply translanguaging by the learners during the interviews. Some of the comments of the learners are given below:

L15: Türkçe söylediğim bir cümleyi öğretmen İngilizcesini söylediği zaman ben de tekrar İngilizcesini kuruyorum ve bana yararlı oluyor. [When the teacher tells the English of a sentence that I said in Turkish, I set it up again in English and it helps me.]

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L29: Cümleyi nasıl kuracağımı bilemiyorum, o zaman Türkçesini söyleyip hocamdan yardım istiyorum. [I don't know how to construct a sentence, and then I say it in Turkish and ask my teacher for help.]

"Asking for clarification" follows with the frequency of 6. The following comments are made by the learners:

L21: Çünkü bazen anlamıyorum konuşulanları, hemen arkadaşıma soruyorum, o zaman anlıyorum. [Because sometimes I do not understand what is being said, I immediately ask my friend, then I understand.]

L39: Sınıfta genellikle hocanın söylediğini anlamadığımız zaman bunu belirtiriz. Hocamız İngilizce söylediğini Türkçe bir şekilde tekrar ediyor. [In class, we usually point it out when we don't understand what the teacher is saying. Our teacher repeats what s/he says in Turkish.]

L47: Etkinlikleri veya söyleneni anlamadığımız zaman Türkçe sorarız. [When we do not understand the activities or what is being said, we ask in Turkish.]

"To keep the flow of speech" follows "Asking for clarification". The comments made by the learners are as follows:

L1: Yazarken daha kolay ama konuşurken uzun süreli düşünmem gerekiyor bir kelime ya da cümleyi. Bu durumlarda akışı bozmamak için Türkçe kullanıyorum. [It's easier when writing, but when speaking, I have to think for a long time about a word or sentence. In these cases, I use Turkish in order not to disrupt the flow.]

L22: Yeterli gramer ve kelime bilgim olmadığı için konuşurken arada boşluklar oluşuyor. Boşlukları doldurmak için direk Türkçeye başvuruyorum. [Since I do not have the necessary grammar and vocabulary knowledge, there are gaps when speaking. I apply Turkish directly to fill these gaps.]

After this item, "Difficulty in pronunciation", "Scaffolding Friends", "Asking for Lexical Help", "To gain time", and "Task Management" follows.

4. Discussion

The results of this study illuminate the intricate nature of translanguaging processes in EFL classrooms. Interestingly, "Lexical Difficulty" emerged as the most frequently occurring

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reason learners engaged in translanguaging during the recall process of their speaking tasks preparation. This demonstrates that the learners resort to their mother tongue when they are unable to find the right words in English. This also signals a need for educators to focus more on vocabulary development in their teaching practices, as the lack of lexical knowledge appears to be a significant barrier in EFL speaking tasks.

Notably, the second most frequent reason for using translanguaging, as revealed by the recall process, was “Scaffolding Friends”. This shows that learners, in a sense, are acting as 'teachers' and guides for their peers, supporting one another's language learning processes by explaining difficult concepts in Turkish. In this way, the learners are actively facilitating comprehension and learning in their classroom community, an aspect that has implications for the understanding of peer-peer interactions in EFL classrooms.

While the recall process showed "Lexical Difficulty" as the prime reason, interviews with the learners yielded a different result. Here, the primary reason learners gave for using translanguaging was the need "To express oneself better". It seems that learners perceive their use of the mother tongue not merely as a workaround for the lack of vocabulary, but also as a means of conveying their thoughts and ideas more clearly and effectively.

Another interesting finding from the interviews was the use of translanguaging for “Asking for Help to make a Sentence”. It implies that students use their first language not only for peer communication but also to clarify their doubts from the teacher. It suggests the importance of a supportive and understanding environment where students feel free to ask for help.

In conclusion, the study provides valuable insights into the reasons and processes of translanguaging in an EFL context. However, as with any study, it is important to acknowledge the limitations of this study. The findings are based on the self-reporting of Turkish EFL learners and may not represent all learners' experiences in diverse contexts. Future research should also consider other factors such as learners' proficiency levels, their language learning backgrounds, and attitudes towards translanguaging.

The study contributes to a growing body of research recognizing the potential benefits of translanguaging in language teaching and learning. It suggests that rather than being viewed as a problem or deficiency, translanguaging should be understood as a natural and resourceful part of

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the language learning process. This, in turn, has important implications for classroom practice, pedagogy, and language education policies.

This study aimed to uncover the reasons for and the frequency of the instances of translanguaging among Turkish learners of English during their preparation for group speaking tasks in language classes. The findings suggest that translanguaging played a significant role in facilitating learners' task completion, especially in terms of managing lexical difficulties and scaffolding friends. This is in line with previous research that highlighted the importance of utilizing all linguistic resources in learning environments (García & Li Wei, 2014; Lewis et al., 2012).

The study also showed that the most common reason for translanguaging was the need to express oneself better, closely followed by managing lexical difficulties and asking for help to make a sentence. This resonates with previous studies which found that learners often resort to their first language (L1) when they find it hard to express their ideas or concepts in their second language (L2) (Swain & Lapkin, 2000; Cook, 2001).

Interestingly, there were also instances of learners using translanguaging to keep the task going, gain attention, manage tasks, and even deliberate on grammar. These diverse uses of translanguaging underscore the dynamic and complex nature of this linguistic strategy, echoing Grosjean's (1989) assertion that bilingual individuals are not two monolinguals in one person.

Despite the growing body of research on translanguaging, more studies are needed to further understand this phenomenon and its implications for teaching practices. This study contributes to this need by providing a snapshot of how Turkish learners of English use translanguaging in their speaking tasks. It also underscores the importance of developing pedagogical strategies that can harness the potential benefits of translanguaging in language teaching.

This study aimed to examine the translanguaging processes Turkish learners of English used when preparing for their speaking tasks and their reasons for using translanguaging. It revealed that students resorted to translanguaging most frequently due to “Lexical Difficulty”. This suggests that students who encounter difficulties in vocabulary in the target language tend to switch to their native language to overcome these challenges, corroborating with findings by García and Wei (2014).

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The second most common reason for students resorting to translanguaging was “Scaffolding Friends”. This indicates that learners utilized their native language to support each other, underlining the importance of social interaction in language learning, and is also in line with Vygotsky's sociocultural theory of cognitive development.

"To gain time” is the third most common reason why students use translanguaging, suggesting that learners view translanguaging as an efficient strategy to convey their ideas without spending too much time thinking about how to express their thoughts in the target language.

Moreover, the analysis of the interviews demonstrated that the most common reason students resort to translanguaging is the need "To express oneself better". This is consistent with findings from previous research that demonstrates that using one's own language can facilitate self-expression and comprehension in the classroom (Hall & Cook, 2012).

These findings underscore the critical role of translanguaging as a strategy to support foreign language learning and suggest the need for teachers to appreciate and encourage the productive use of students' native language as a learning resource. While the traditional monolingual approach in language teaching has been dominant, the current research provides empirical evidence that supports a multilingual approach. Rather than viewing the use of a native language as an impediment to language learning, educators should recognize its potential in enhancing language acquisition.

Overall, the results of this study demonstrate that translanguaging can serve various functions and meet different needs of EFL learners during their preparation for speaking tasks. The findings also suggest that language teachers should be open to and supportive of learners' use of translanguaging, considering it as a valuable tool for learning rather than an obstacle. Further research should continue to explore translanguaging in different educational contexts, examining its benefits and potential drawbacks in enhancing learners' language proficiency and communicative competence.

In conclusion, the study contributes to the growing body of literature on translanguaging by offering insight into the processes and reasons why EFL learners resort to their native language when preparing speaking tasks. The findings underscore the significance of translanguaging as a resource for EFL learners and suggest the need for language teachers to incorporate

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translanguaging into their teaching practices to facilitate learning and increase student engagement.

The study, however, is not without its limitations. As the study only focused on Turkish learners of English, future research should explore the translanguaging processes of learners from different linguistic backgrounds to provide a more comprehensive understanding of the role of translanguaging in foreign language learning. Furthermore, it would also be beneficial to investigate the perspectives of language teachers on translanguaging and its implementation in classroom practices.

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Literary Language Issues In The Environment Of Eastern Anatolia (Based On The Creativity Of Yusif Maddah)

Assoc. Prof. Dr. Sevinj Aghayeva
Azerbaijan National Academy of Sciences
Literary Institute named Nizami Gencevi,
Hazar University, Azerbaijan
ORCID NO: 0000-0002-5938-1704

Abstract

In order to explain and highlight any language issue, it is very important to refer to classical literature examples along with historical facts. The modern Azerbaijan literary language was formed as a result of a long historical process, it was able to protect itself from language attacks (foreign language elements) due to its strong lexical fund. Our scientific article will be about the processing characteristics of a group of words (which are archaic for the modern Azerbaijani literary language) in the poetic examples of the classical Azerbaijani poet Yusif Maddah, who wrote and created in the literary language of the 14th century, formed in the environment of Eastern Anatolia. The creativity and poetic language of Yusif Maddah, who lived in Eastern Anatolia in the 14th century and knew the language laws of the time perfectly, created works with interesting content in the Azerbaijani-turkic language (in a complete form), were almost not involved in separate research, and extensive information was not given about the linguistic features of his works. In our article, the lexical elements - archaisms used in the language of the classical poet will be compared with other examples of literature existing in different eras, and as a result, information will be given about the state use of those words in the modern literary language of Azerbaijan. Also, some comparisons will be made with the dialects of the Azerbaijani language.

One of the main aspects is the fact that the first classical written examples that appeared in the Eastern Anatolian environment are in the Azerbaijani-turkic language. In fact, it is possible to see this more precisely by referring to the poetic language of Suli Faqih, Mustafa Zarir, Durbek, Gazi Burhaneddin, who lived in this geographical area, as well as Yusif Maddah, whom we involved in the study. This research paper also examines the issue of the place of words in the vocabulary according to the laws of language development.

Keywords: literary language, Eastern Anatolia, archaism, relative

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Introduction

A number of monuments of our mother tongue belonging to the 14th century were created in Eastern Anatolia and the areas close to it, and preserved the linguistic features of the ancient Azerbaijani-turkic language characteristic of the period. To prove any linguistic fact, the history of language definitely comes to our aid, that is, we explain the situation of the fact related to the modern language from the historical point of view by making comparisons by referring to classical examples, and we are able to give a coherent, fact-based scientific opinion about it.

The 14th century is a period rich in facts in the history of the literary language of Azerbaijan. During this period, our masters of the word, who wrote and created mainly in the Eastern Anatolia geography, deeply knew the rules of the literary language characteristic of the period and created valuable examples of art in this direction. If we look at examples of native speakers from the 14th century, it is possible to clearly see that three languages - Azerbaijani-turkic, Arabic and Persian - are the leading languages. Because the political, diplomatic, and economic situation of that period and before that created the basis for the three languages to be used together. We should note that the Azerbaijani-turkic language became the universal language in the XIV century as a result of statistical calculations in the samples that are the object of research. So, in terms of language, when we study the examples of the native speakers belonging to the XIV century, we can see that classical poets refer to Azerbaijani-turkic words more than the other two languages. To explain this more precisely, we take a link to the next stage of the research work.

1. Yusif Maddah in the Azerbaijani literary language of the XIV century

Classical poet Yusif Maddah, known for his unique works in the Azerbaijani-turkic language in the 14th century, formed in the literary environment of Eastern Anatolia and spread his vocabulary among the people, skillfully used all the intricacies of the language. Yusif Maddah created works in many genres and on various topics. Basically, the "maqtal" genre is more interesting in his work. Although as a genre "maqtal" belongs to Arabic literature, there have been many people who refer to it in Turkic literature as well.

Yusif Maddah's place in the literature of the 14th century is mainly related to the variety of themes and wordplay in his works. Since there is very little information about the poet's life and work in scientific sources, we consider it appropriate to express this opinion. Although he spoke his word as a classic poet addressing the theme of "Varga and Gulshah" in the history of Azerbaijani literature, as well as recently, a number of his poetry works have been found and appeared.

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Yusif Maddah's works in his native language serve as a solid source for studying our literary language and literary history. So, when you turn to the poet's works from the point of view of linguistics, it is possible to come across valuable facts. It can be said that the poet used all the intricacies of the language locally and applied words and phrases appropriate to the topic, and mostly created his works in a readable language, a language that the people could understand. Although Eastern Anatolia and the areas close to it are somewhat different from a socio-political point of view, Yusif Maddah was closely acquainted with the works of poets before him, had a deep knowledge of the leading themes of the time, and achieved his goal in this direction. Yusif Maddah's works are easy to read and understand. The main reason for this is that he wrote his works close to the vernacular, in a language that the people could understand. Simplicity in the language of the samples, stylistic diversity, and pure human feelings are due to the fact that, on the one hand, they were created by living folk language, and on the other hand, by following the classical Azerbaijani-turkic literary language and its rules. The creative language of the poet reflects the main directions of the development of the Azerbaijani literary language of the XIV century.

Our main goal in the research work is to analyze a group of words in the language of Yusif Maddah, which are considered archaic from the point of view of the modern Azerbaijani literary language, to determine their status in ancient times, as well as the degree of their use in dialects and accents.

NOTE: Before proceeding to the next stage of the study, we would like to inform you that the examples given for comparison are given according to the letters of the Modern Azerbaijani alphabet. In some cases, the letters in the Azerbaijani alphabet are changed because they do not have equivalents during translation into English.

2. Archaisms in native examples of Yusif Maddah

In the examples of our classical artist Yusif Maddah, who is known for his creativity in the literary environment of Eastern Anatolia, there are many words that have become archaic and lost their functionality in the modern Azerbaijani language. Although we do not give all the words belonging to this group in the article, we present some of them as follows:

Eyle didi cān-ı şīrīni Ḥaḳa
Ḳıldı teslīm iy karındaş sen beḳā (Kenan, 2008: 213)

The word "karindaş" meaning kinship is the oldest variant of the word "brother" currently used in modern Azerbaijani literary language. If we look at the etymology of this word, which is one of the common words for the fourteenth century and before, it is possible to see that the

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variant "qərindəş//qarındaş" is also used. In the "Kitabi-Dada Gorgud" epic: Dede, qız qarındashımın yoluna men istersem, verermisen?" (Meaning: "Dada, would you give me the path of my sister, if I ask for it?"
It is also reported that the phonetic variant of the word "gardash" in the form of "kardash" in the meaning of "blood relative" and "brother" was recorded in ancient Turkic written monuments (Ancient Turkic dictionary, 1969: 401-402).
This word was also used in the language of M.A. Sabir, who lived and created in the 20th century: "Ac qarındaşlara infaq edilirmi, emican?" (Meaning: "Do you pay for the hungry brothers, amican?")
Other sources also provide information about the etymology of this word (Talat, 2003: 81).

Bunda sen yirüñ temāşā eyledüñ
Düşde gördüm diyü anı söyledüñ (Kenan, 2008: 214)

In the language of our classical poet "düş" means "dream", "event".
In some dialects of the Azerbaijani language, this word is used in the phonetic variant of tuş/çuş. "Bir gün bir yaxşı tuş gördüm" (Meaning: "One day I saw a good dream" (Zagatala); "Çuş deyşiriy olar" (Kazakh). (Meaning: "Sleep is reversed") (Dialectological dictionary of the Azerbaijani language, 1964: 391-451).
Although it occurs in some dialects, the word "düş" has become archaic for the modern literary language.
The frequent use of the word "düş", which has an ancient historical root in the language of Muhammad Fuzuli, in the sense of "dream", "event" shows that it is one of the common words in the literary language of the XVI century: "Xah derviş olavü, xah qəni, Usu azar duşunda görse seni" (Meaning: "Either be poor or rich, the mind will be confused if it sees you in a dream") (Fuzuli, 2005: 239).

Püşte ḳıldı küşteden ol ser-firāz
Ḳaṣd ḳıldı kim çeriden döne bāz (Kenan, 2008: 215)

The word "çeri" in the example is used in the sense of "troop", "army". According to scientific information, this word, which originally had the structure of "çeriq" and meant "army", "troop", was fixed and developed in the form of "çeri" in the literary monuments of Azerbaijan (Sevil, 2003: 110). This word has become archaic in modern Azerbaijani literary language.

Tañrınuñ ḫışmına sizler müsteḥaḳ
Olduñuz hem iy la`īn ü pür-dalāl (Kenan, 2008: 231)

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The word “xışım” used by Yusif Maddah in the example is not used in the modern literary language of Azerbaijan, it is used in the southern dialect, mainly in the Lankaran-Astara zone, in the same phonetic composition. Although this word means "speed" in the Lankaran dialect (“Quşa bax, gör ne xışımnan gedey”. Meaning: "Look at the bird, see, how fast it goes!"), in the Astara dialect it means "nervous, angry" and is considered one of the words used in everyday life (“Gör nece xışımnan baxey! Çox xışımli qızdur”. Meaning: “See, how she looks hurt! She's a very angry girl”).
When we refer to other sources, we find that the phonetic variant of this word "xişm" means "bitter, anger, rage" (https://www.azleks.az/online-dictionary/khishm).

Ḥażretüñden yā İlāhe’l-`ālemīn
Ḫışm gelsün bunlara hem buġż u kīn (Kenan, 2008: 231)

In this example, Yusif Maddah used the word "xişm" together with its synonyms "buğz" and "kin" in the same verse, creating conditions to further increase the influence of the idea. This kind of colorful wordplay is often encountered in the language of Yusif Maddah. We see that the poet has a rich vocabulary. Someone with the nickname "Maddah" should only have this kind of talent.

İşbu sözi çün işitdi ol çeri
Ḳıldılar ġavġā ḳamu leşker varı (Kenan, 2008: 247)

The words "qılmaq, qavğa, qamu" used in the second line of this example are considered archaic in the modern literary language of Azerbaijan. Here the indefinite pronoun "qamu" means "everyone".
It is noted that the word qemu//qamu, which has an interesting lexical-semantic feature, was little used in the earlier stage of development of our language in the sense of "group, multitude". Its form is qəmusi//qamusi (xemu, xamusi, hamısı) which has adopted the third person suffix. has kept the meaning of community (Firuza, 1988: 59).
In our modern literary language, the use of the "qamu" variant as both an indefinite pronoun and a definite pronoun has become archaic.
Sometimes auxiliary words that have completely lost their independence from the point of view of the modern Azerbaijani literary language are often used together with Arabic and Persian borrowings in classical examples. However, in the example, Yusif Maddah used the expression "qılmaq", which is one of the ancient words of our language, but later became fixed in the language as an auxiliary word, together with the noun "qavğa". We see that only the verb "qılmaq" is used in our modern literary language in the composition of such compounds as "to pray", "to pray for one's life", "to prostrate", "to have mercy", "to be faithful".

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It is noted that the verb "qılmaq" is a synonym of the auxiliary verbs "et" and "eylə" in the Azerbaijani language, it was used in the language of literary and artistic works until the beginning of the XIX century, and after the XVIII century, the scope of this verb was gradually limited (Minaya, 1977: 49). In the language of M. Fuzuli, the verbs "etmek" and "elemek" are chosen according to their frequency of use among the auxiliary verbs that form complex verbs by joining names of Arabic origin. The number of these is twice as much as those made by the words "olmaq" and "qılmaq" (Ilaha, 2000: 65).

Gicenüñ bir baḫşı geçdi nāgehān
Bir tarāka ḳopdı feryād ü fiġān (Kenan, 2008: 281)

The word “taraka” used by Yusif Maddah means "firecracker" in Ordubad, Shusha dialect: “Bayramda taraqqa atardıx” (Meaning: We used to throw firecrackers on the holiday https://obastan.com/taraqqa/572189/?l=az
However, in the dialect of Astara region, the phonetic variants of this word "tırakke, treqqe, treke, tereke" are used in the meanings of "sound", "tramp".
In the explanatory dictionary of the modern Azerbaijani language, it means "explosive firecracker made of paper filled with gunpowder (used for fun in fireworks)" https://obastan.com/taraqqa/38716/?l=az

Dört biñ er bir kezden üşdiler aña
Her biri çevre yapışdılar aña (Kenan, 2008: 200)

In the example, Yusif Maddah used the verb ûş (mek) in the meaning of "gathering". This verb is considered a relative archaism for the Azerbaijani literary language. Because in a number of dialects and accents of the modern Azerbaijani language, the root of the word "üşemmeg//üşemmex`//üşetmex`” is used (https://obastan.com/axtar/?l=az&q). In "Dastani-Ahmed Harami", one of our native language monuments, this word can be seen at the root of the word "üşən (mək): “Üşenirler, herami duya derlər. Gele bizi qıravü soya derler” (Meaning: "They say that Harami will hear and come and rob us”) (Vugar, 2001: 42)
This word is also in the poetic language of our classical poet I. Nasimi. It is found in the meaning of "to fear": “Güle el sunmasın, ol kim tikeninden üşenür” (Meaning: “He should not touch a flower, he is afraid of a thorn”) (Jahangir, 1970: 330).

Urdı başından `imāmesin yire
Eytdi yā Rab işbu sırra kim ire (Kenan, 2008:.223)

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We should note that although the verbs ur (maq), ayit (maq), ir (mek) were historically considered common words in different periods of the literary language, they became archaic from the point of view of the modern Azerbaijani language and were included in the passive fund of the language.

The meaning of the word ir (mek) in the example is "to reach, to get".

Taking into account the instability of the prototype “y” in front of the word in Turkic languages, they assume that the original form of the verb “irmak” was yermak//yirmak, and with the dropping of the “y” consonant, it became ermak//irmak: “Ol muradına erdi” (Meaning: “He got what he wanted" (Sevil, 2003: 126).

In modern Turkic Language, the verb er- (substitution of i < e) is used to mean "to reach, to arrive, to reach, to hit".

In the language of I.Nasimi, the verb "ir (mak)" is used in the sense of "to reach”: “Ey Nesimi, ger sözün menisi bipayan deyil, Neçin irmez kimsenin fikri anıŋ payanına" (Meaning:"O Nasimi, the meaning of the word is not infinite, why is someone's thought not enough for its end").

The word “ir (mak)” is not found in colloquial language in the sense of "to reach, to catch up". In the dictionary of V.V. Radlov, L.Z. Budagov, the verb ir (mak) appears in the meaning developed in the language of Yusif Maddah (Radlov V.V., 1893: 753; Budaqov L.Z., 1869: 187). In the modern explanatory dictionary, the word ir (mək) is not shown in the meaning of the examples, but in the sense of "good, uncrushed, large wheat or barley" (Ağamusa, 2005: 155).

The verb "irish (mek)" formed from the verb "ir (mek)" also occurs in M. Fuzuli's Azerbaijani-turkic "Divan". The verb "irishmak" is formed from the combination of the constituent parts “ir-” "to come and reach, to arrive" and the reciprocal suffix “-iş”.

This word is considered one of the ancient verbs, it is given among the words that do not have terminological characteristics in dialects and accents. Phonetically, it is in the form of "ilish (mek)", meaning "reach", in "Dade Gorgud" in the form "irish(mek)" meaning "to reach", in Ibn Muhanna in the form "irish" meaning "end, final", as well as it is still used in modern Turkic languages (Minaya, 1977: 92).

With reference to this idea, it can be said that the verb "irishmag" is not used in the dialects and accents of the western group of the modern literary language in the sense of "to reach, to catch up", but in the sense of "to talk", "to argue", "to laugh" (dialectological dictionary of the Azerbaijani language, 1964 : 234). In the modern explanatory dictionary, this word is recorded as "to laugh in vain, to whiten one's teeth" (Agamusa, 2005: 55).

Conclusion

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The processing of words and phrases belonging to the vernacular in the examples of the native language related to Yusif Maddah attracts more attention. The fact that the classical poet addressed topics that were leading for the time using all the possibilities of the 14th century Azerbaijani-turkic language in an easy-to-understand language, and created a work in the geography of Eastern Anatolia in this way indicates that he is a perfect master of words. Based on the principle of creativity, Yusif Maddah, using the literary language norms of the XIV century, arranged the linguistic facts in the verses without harming the logic and tried to keep the poetic meaning. By creating most of the poet's works in his native language (Azerbaijani-turkic), he had a special service in the enrichment and development of the literary and artistic language of Azerbaijan. While maintaining the national and folk ground, this genius benefited as much as possible from the Arabic and Persian languages, which were considered the winning languages of the time, he put his mother tongue in a lively competition with these languages, and confirmed that he won this competition with his poetic creativity.

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