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**Research article/Arařtırma makalesi**

Inclusion of disabled immigrants/refugees in the Greek educational system:  
Views of primary school teachers

*Panagiotis GİAVRİMİS*



## Inclusion of disabled immigrants/refugees in the Greek educational system: Views of primary school teachers

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### Abstract

*In recent decades, there has been a systematic academic research attempt to analyze issues related to disability. Although disabled people are an essential group of migrants and refugees, and international conventions protect their social inclusion, it is noticeable that migration studies have not dealt with persons with disabilities until recently. The corresponding disability studies do not study the group of migrant/refugee-disabled persons. This study aims to research the teachers' views of the N. Aegean region on including disabled migrants and refugees and the educational policies implemented. A semi-structured interview was the research tool used for this study. The participants in the study were twenty-three primary school teachers. The teachers in our research pointed out that the right of disabled migrants to be included in education is lost in the context of evaluation criteria, inadequate educational policies and the fear of individuals resisting the dominant discourse of ableism and hyper-socialised reality.*

## 1. Introduction

In recent decades, there has been a systematic academic research attempt to analyze issues related to disability. The primary concern about disability has its roots in the social movements and lived experiences of disabled people. The significant growth of theory related to disability has moved alongside the disabled people's movement, campaigns for equality and inclusion in all social life activities and manifestations (Oliver, 2004). The concept of disability became associated with that of 'normality'. Whitehead (1992) notes that the term 'normality' conceptualization was linked to several post-war political and social developments, including the human and civil rights movements, the development of the welfare state, and the challenge to structural-functionalist theories associated with stereotyping and deviance. At the same time, Goffman (1961) describes the dehumanization and stigmatization of people with disabilities by defining the notion of normal and abnormal in the socialization process as having a critical role in interpreting them. In the World Health Organization's International Classification of Functioning Disability and Health (World Health Organization, 2016), disability and functioning or dysfunction are considered to be the results of the interaction between health conditions and environmental factors while being indicative of dysfunctions at one or more levels involving impairments, activity barriers, and participation limitations. Disability is rooted in a health condition (disorder or disease) which, in interaction with the environment, results in challenges in the functioning of the body in the physical and social environment and the social activity and participation of the individual. Environmental factors affect the life conditions of the individual. Environmental factors are understood as external environmental factors (physical, social, educational, cultural) that may involve human and physical changes in the environment, attitudes, values, and institutions prevailing in each society, as well as internal personal factors such as social and educational level, gender, occupation, etc. (World Health Organization, 2001).

Models of approaching disability in the contemporary era have a social orientation, in contrast to the medical model, which focuses on the 'disability' and deficits of the individual (Barnes & Sheldon, 2010). The 'medical'

*\*All responsibility belongs to the researchers. All parties were involved in the research of their own free will. The author declares that ethics committee approval is not required for such studies in her/his country.*

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model has at its core the 'body' issue promoted by the naturalistic approach, which conceives the human body as a pre-social, purely biological entity (Goffman, 2001; Oliver, 1990). The stigmatization and denial accompanying the conceptualization of disability legitimize society's attitude even further. Disability is perceived as a biological pathology of the individual, and the individual is its victim. The medical model incorporates the 'deficiency' into 'disability' and the individual himself, excluding from the interpretive paradigm the social, economic, and cultural factors that construct social interactions and social representations of lived experience (UPIAS, 1976). The individual is marginalized from the social environment and approached far from social reality. The emergence of the social model attempts to eliminate the established notion of "blame" on deficiencies and body function and to define disability through social variables. According to the disabled people's movement (UPIAS, 1976), disability is "the disadvantage or restriction of activity caused by a contemporary social organization which takes no or little account of people who have physical impairments and thus excludes them from the mainstream social activities ". In contemporary times, people with disabilities continue to be seen as deficient and most often suffer discrimination in education and society, which is significantly higher than any other social group (Longmore, 2003; Rimmerman, 2013).

### *1.1. Migration and disability*

Migration is a diachronic and global phenomenon. By the end of 2013, approximately 51 million migrants had moved from their country of origin (UNHCR, 2014), of whom 15% were persons with severe and moderate disabilities (Crock et al., 2012). Burns (2019) reports that 10 million disabled migrants were recently moved. One in five experience physical, sensory, and intellectual disabilities, one in seven are chronically ill, and one in twenty suffers from injuries (Handicap International and HelpAge (2014). Article 19 of the United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2006) refers to that:

“States Parties to the present Convention recognize the equal right of all persons with disabilities to live in the community, with choices equal to others, and shall take effective and appropriate measures to facilitate full enjoyment by persons with disabilities of this right and their full inclusion and participation in the community.”

Moreover, article 9 also mentions: “States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others ... in schools”.

Although the disabled are an essential group of migrants and refugees, and international conventions protect their social inclusion, the host countries' statistics and research on the migrant and refugee populations do not show them as an existing group of people (Soldatic et al., 2015). It is noticeable that migration studies have not dealt with persons with disabilities until recently, and the corresponding disability studies do not study the group of migrant disabled persons (Pisani & Grech, 2015). Moreover, in the records of migrants and state agencies, migrant disabled persons are classified as vulnerable groups, and thus, there is a blurred picture of their number (Yeo, 2015). More problems are raised because there is confusion about the criteria for assessing disability (Elder, 2015; Soldatic et al., 2015). Assessment, in many cases, is done with translated manuals that lead to problems of language comprehension or cognitive perception due to disability problems, causing incorrect diagnoses and categorization of individuals (European Agency for Development in Special Needs Education, 2009). The UNHCR's (2011) Resettlement Handbook maintains that 'Refugees who are well-adjusted to their disability and are functioning at a satisfactory level are generally not to be considered for resettlement under'. The Resettlement Handbook medicalises the management of persons with disabilities. It segregates disabled persons according to their functionality in the new social environment while treating functionally disabled persons as non-disabled persons (Walton et al., 2020). Thus, there are variations between states in reception policies, with or without restrictive practices, resulting in variations in the conditions of inclusion of persons with disabilities in the host countries (Dryden-Peterson et al., 2019; Mirza, 2010; 2011a). At the same time, according to Crock et al. (2017), inadequate training, lack of teaching aids and assistive devices, inflexible curricula, and inaccessible buildings further exacerbate the problems of educational inclusion.

Persons with disabilities and immigrant or refugee backgrounds (PDMR) hold a dual identity, stigmatizing and shaping their social identity accordingly. This intersection of the two negatively constructed attributes shapes difficulties of conditions of social disembodiment, which emerge in the social and school practices of the host countries, regarding their identification, inclusion, and empowerment of their personal development (Bešić & Hochgatterer, 2020; Knauf, 2019). Hence, the international literature identifies structural and institutional barriers, bureaucratic obstacles, a class-based treatment favoring the robust and advantaged, and discrimination (El-Lahib & Wehbi, 2012; Mirza, 2011b; Walton et al., 2020). Characteristically, PDMR families or individuals do not declare

their disability due to fear of stigmatization or deportation, because they do not know or have not been informed, or because of cultural beliefs in their country of origin (Walton et al., 2020).

## **2. Theoretical framework**

The conflict theory holds that the diversity of accessibility of groups, inherent in a social structure, to economic resources underpins the conflicts of interests between social groups. The inequalities in the distribution of economic activity and its colonial power establish the relations of domination and subordination in society. The unequal distribution of social control and domination-subordination ties form the basis of conflicts between social classes. According to Marx and Engels, the history of societies is the history of social class conflicts (Bottomore, 1983). The main social classes in Marx's theory are the capitalists and the laborers (proletariat). The former is those who own the means of production and exploit the labor-power of the proletariat to increase their capital through the surplus value of the produced commodities. The proletariat members possess the labor power and struggle to survive through it by selling it to the capitalists. Societies change because the struggle to acquire power can create new social groups to replace the older ones. The conflict resolution raises recent conflicts for dominating the means of production and power (Althusser, 1979; Marx, 2008). Under this perspective, neo-Marxist theories approach disabilities as forms of power signaling and, simultaneously, as a social struggle, control, domination, or negotiation field. The focus in the globalized society of neoliberal and competitive policies is on labor power and the individual's contribution to the development of society. The mode of production is becoming a decisive factor in determining the formation of social practices and phenomena in constructing social reality. In migration processes, the flow of economic capital establishes conditions of colonialism and exploitation of the developed countries in the non-developed countries of the periphery. Migrants constitute a global stock of cheap labor power and become a field of exploitation (Emke-Pouloupoulou, 2007). At the same time, neoliberal policies assume that bodies are healthy and will not compromise national social security systems (Mirza, 2011a). In the inclusion of PDMR, the focus is given to the labor shortage and the contribution of disabled persons to the development of society. In contrast, contemporary society's ableism patterns are inherent in all everyday life practices, and the environment is structured to cater to non-disabled people.

The choices of integration policies for PDMR are based on a rational assessment regarding the costs to national economies. At the same time, the responsibility for the protection and care of the disabled person is transferred to their families (El-Lahib & Wehbi, 2012). Stigmatization is consequential, and social norms limit the social prospects of the individual (Goffman, 1963). In addition, the persistence of the prevalence of the medical model in applied state policies on disability, despite institutional reforms, the public discourse of inclusion, and the pressures of the disability movement, legitimize even further the stigmatization and negative emotions that come with the conceptualization of disability. Social inequalities are often intensified and reinforce the exclusion or marginalization of disabled persons in many cases. Social inequalities cause families of low socio-economic levels, such as immigrants and refugees, to experience social exclusion compared to those with more economic resources. The lived exploitation of 'outcasts' transforms disability into a 'continuous business', as Apple (2001) states. Individuals depend on subsidized state policies or native philanthropy; their participation in decision-making about themselves and their lives is practically non-existent and encompassed in the standardized procedures of international organizations, which outline the limits of their rights and social inclusion.

### *2.1. Greek educational policy for PDMR*

In the last twenty years in Greece, for the inclusion of people with special educational needs and disabilities, educational policies have been modified and shifted, at least in institutional and public discourse, to the social model. In Greece, laws 2817/2000 and 3699/2008 significantly improved addressing the issues of people with disabilities. These laws established the compulsory education of people with disabilities, putting society responsible for the socialization of these people.

According to Law 3699/2008, students with disabilities and special educational needs, in addition to other settings, can attend a mainstream school class if they have mild learning difficulties or a mainstream school class with parallel support-co-education by Special Needs Education teachers. For these learners, social support from significant others in the school environment and the creation of social networks play an essential role in their socio-cultural inclusion. Law 4318/2016 (Article 81, paragraph 6) defines the concept of inclusive education as a critical dynamic pillar for the concept of Special Education and Education and conceptualizes it as the promotion of equal opportunities for the inclusion and education of all students while, at the same time, stressing the importance, and simultaneously the necessity, of raising awareness of the student population in mainstream schools

on human rights and respect for diversity. Differentiating elements of inclusive education cases in Greece relate to the heterogeneous services for the various categories of persons with disabilities, but also their inclusion or not in the mainstream, depending on the "category" to which the person has been included (e.g. Law 3369/2008/Art.2, par.1,3), or the diagnosis made by specific educational institutions (e.g. Law 4186/2013/Art.28 par.15). The Greek Ombudsman for the present situation of special needs education notes that the problems identified are related to: the "serious understaffing, the late start and shrinking of the school year ....", the "inadequate educational support for students with disabilities and/or special educational needs attending mainstream schools (lack of appropriately adapted educational programmes and teaching materials, incomplete implementation of institutionalised special support measures, such as parallel support and attendance at inclusion classes .....", the " continued underfunding of SEN and insufficient resources allocated ....." (Greek Ombudsman, 2015).

In recent decades, Greek legislation on immigration has begun to be aligned with the broader framework of European policy. More specifically, Law 3386/2005 presents clear improvements compared to the previous laws, mainly Law 2910/2001, providing simplified procedures and decentralization at the level of services. According to Article 40 of Law 2910/2001: '1. Minors who are foreigners residing in the Greek territory are under the obligation of minimum school attendance, as are Greek citizens. The Ministry of Education and Culture adopted intercultural education with the new curricula of Cross Thematic Curriculum Framework Syllabus, whose main purpose is "to provide education to young people with educational, social, cultural or educational particularities" (Petraouki & Xanthakou, 2003). Law 3386/2005 in Article 59 defines "the rights of family members of third-country nationals". Specifically, it refers to the right of access to education. In 2010, Law 3879 established Educational Priority Zones (ZEP). Article 26 of this law determined that the ZEPs will operate in primary and secondary schools and, in particular: "...in areas with a low education performance, high school drop-out rate and low access to higher education, as well as low socio-economic indicators, such as a low well-being and development rate and a high risk-of-poverty rate. The aim of the ZEPs is the equal inclusion of all students in the education system through the operation of supportive actions to improve learning performance, such as the operation of reception classes, remedial classes, summer classes, and classes teaching the mother tongue of the student's country of origin...". Due to the massive influx of migrants, especially refugees, after 2015, the Greek state enacted more detailed legislation on establishing structures to deal with this enormous wave of migration and defined intercultural education. An essential action was the introduction of the Reception School Facilities for Refugee Education (DYEP). These structures are designed to provide participatory and practical teaching to students from vulnerable groups so that they can be functionally included in the Greek educational system. The DYEP ZEPs aim to provide academic support to refugee students in acquiring Greek as a second foreign language. By Law 4547/2018, articles 71-82 define the categories of refugee pupils who are provided with education, the forms of education, the way of registration and attendance at the DYEP ZEPs, their operation, and their responsibilities (Androulakis et al., 2018).

According to Law 4375/2016, PDMRs, after they arrive in Greece, are transferred to the Reception and Identification Centres to proceed with the identification process, according to article 20 of Law 4540/2018, where their "vulnerability" is assessed. PDMRs are included in the general category of vulnerable persons. Law 4540/2018 in article 14 (par.8) states that:

"As vulnerable groups shall be considered for this law: a) Unaccompanied minors, b) Persons who have a disability or suffering from an incurable or serious illness, c) The elderly, d) Women in pregnancy or having recently given birth, e) Single parents with minor children, f) Victims of torture, rape or other serious forms of psychological, physical or sexual violence or exploitation, persons with a post-traumatic disorder, in particularly survivors and relatives of victims of ship-wrecks, g) Victims of trafficking in human beings."

There are severe delays in assessing vulnerability, unclear assessment criteria, lack of information for disabled migrants, problems in accessibility to services, inadequate legal support, inadequately trained staff, and inadequate living conditions (National Confederation of Disabled People of Greece, 2019a). These procedures result in many people remaining unidentified and deprived of essential rights. In addition, those identified due to lengthy procedures face similar challenges (National Confederation of Disabled People of Greece, 2019b). Also, the risk for social exclusion is extensive in North Aegean, our research area, and the country's central region as the gateway for most migrants (Provi, 2022).

The Greek educational system is characterized by a uniform and centrally coordinated bureaucratic system, where the curricula, despite the innovative reformist concept of diversity in the Cross Thematic Curriculum Framework Syllabus, emphasize a monocultural approach in all academic subjects since there is an absence of recognition of the necessity of teaching other mother tongues. At the same time, the cultural elements of immigrants or 'others' are underestimated since the school texts are insufficient to highlight them. Educational policy is therefore

shifting towards a monolingual and monocultural approach whereby the various cultures are silenced, marginalized, and eventually overlooked during the learning process. Students whose cultural capital differs from that of the Greek educational system are often excluded from accessing essential parts of the educational capital since the only way out is to internalize the dominant cultural elements of the Greek school (Giavrimis & Dimitriadou, 2023, p. 74; Kessidou, 2008).

## *2.2. Purpose of study*

The purpose of this research is to study the views of the teachers of the N. Aegean region on including disabled migrants and refugees in Greek education and the educational policies implemented. The research questions concerned the teachers' views: (a) on the right to education of disabled students with an immigrant/refugee background; (b) on the functions of inclusion of disabled students with an immigrant/refugee background; (c) on the peers' attitudes towards the inclusion of disabled students with an immigrant/refugee background; (d) on the characteristics of the Greek educational policy regarding inclusion of students with an immigrant background; and (b) on the teachers' recommendations regarding the inclusion of disabled students with an immigrant/refugee background.

## **3. Method**

In the present research, the qualitative method was used, which approaches social reality and its interpretation through the actors' meaning-making. Everyday practices, social subjects' interactions, and phenomena are constructed and analyzed through symbolic perception and the understanding that social actors attribute to them (Iosifidis, 2017). The actors' lived experiences are crystallized as a "common" mind, and social phenomena acquire an intersubjective entity (Schnell et al., 2014).

### *3.1. Participants*

The participants in the study were twenty-three (23) primary school teachers. Participants were selected using non-probability sampling based on the criteria of gender, years of experience, region of work, and teaching qualification. Fourteen (14) participants were female, while nine (9) were male. Regarding years of experience, three had between 1 and 5 years of experience, eight between 6-15, 6 between 16-25, and 6 more than 26 years of experience. Sixteen were mainstream education teachers, 3 were special needs education teachers, two worked in ZEP classes, and two worked in parallel support. In addition, 16 individuals worked in schools in urban areas and 7 in rural or semi-urban areas.

### *3.2. Research tool*

A semi-structured interview was the research tool used for this study. Interviewing through respondents' discourse lets the researcher record the social actors' lived experiences regarding social phenomena and their interpretive schemas (Schnell et al., 2014). At the same time, the semi-structured interview offers flexibility and provides more freedom to ask questions to deeply explore the teachers' views (Iosifidis, 2017). The interview guide was based on the literature and theories on the issues of migration, disability, and intercultural education. The interview guide questions were included in three thematic axes: a) teachers' knowledge about migration and disability. The first thematic section had questions on conceptual approaches to migration, migrant-refugee, intercultural education, and disability, and b) educational policy on migration and disability. The second thematic section dealt with teachers' views on educational policy in Greece regarding migration and disability. Issues related to institutional documents, logistical infrastructure, curricula, and teacher inclusion training are analyzed here, and c) attitudes towards including disabled immigrants/refugees in the Greek educational system. The third section deals with the attitudes of teachers and other educational community members towards including immigrant/refugee-disabled people in the Greek educational system.

### *3.3. Procedure for data collection and analysis*

The interviews were conducted from May 2022 to October 2022. The interviews lasted between 35 and 55 minutes. Participants were informed about the ethical issues to be respected during the discussions (e.g., anonymity, confidentiality). All participants signed a consent form. After the audio recording, the interview was transcribed into text, and then the data was coded and categorized into conceptual categories (Mukherji & Albon, 2014). The resulting categories, subcategories, and themes formed the final interpretation of the phenomenon (Braun & Clarke, 2012).

## 4. Findings

### 4.1. *The right to education*

Participants referred to the need to include disabled migrant-refugee children in the school environment. They mentioned education as a right, although they stressed the inherent challenges. Also, one teacher stated that they should not be irregular migrants to be included.

S11: "That is exactly right because we all have the right to education! It is one of the most important human rights. I do not find anything crazy and tragic in that it means that these children should be educated. They are going to come here, and what will they do?"

S4. "But it is hard to do. I am not negative, but it is impossible to integrate such children who have such experiences and come from completely different countries with different cultures and cultures. You would need to do much work."

S15. "... is my opinion, what I mentioned to you, that they should, first of all, be integrated into a special needs school...."

S3. "As long as they are in the country legally, they have every right to participate in the school system. "

### 4.2. *Functions of inclusive education*

Participants highlighted the features and benefits of inclusive education, such as accessibility to social processes, starting a new beginning in life, student engagement, skills development and socialisation. The necessity of education is demonstrated by the objectives it achieves. More specifically, school inclusion will remove educational and social exclusion by enabling children to take active roles and actions within the school and society. At the same time, enhancing children's cognitive levels and skills will contribute to fully developing their personalities. Finally, the school environment acts as a protection against possible delinquent acts.

S4. "E..... Very important, you engage the child in a process ... to become more functional to see that their life makes sense ... to step on a step and say you belong here! ..."

S17. "Building skills or focusing on some other goals, on some other things, on some other actions."

S1. " ... they will socialise by getting to know other children ... they will know what they can do in the future."

### 4.3. *Peer attitudes*

Regarding the attitudes of native students, parents and the school environment have an essential role in providing information and preparation. As Bourdieu (1986) states, the attitude towards events derives mainly from the family and determines the social image of each individual. It encompasses the knowledge of the rules of the educational system, as well as the habitus of parents who transmit it to their children through dialogue and daily activities. Children are influenced by their family environment to a considerable degree. Children enter the school environment as agents of the views of the milieu with which they interact daily. The school can significantly assist in accepting the inclusion of children from migrant backgrounds.

S3: No, I do not think they would have a problem...

S4. "I think the children are more innocent and relaxed. Unless a child is brainwashed by their family environment."

S9. No, I do not think there will be a problem if there is parallel support

S11. "I do not think they will have a problem ... ah ... nor are the children... uh, it is the parents of the children who create the problem; this problem is created from home, and it is carried over to the child at school...."

S12. "No matter how difficult the children's world is, it is more flexible and fluid."

### 4.4. *Implementation of the inclusion policy*

Firstly, an important dimension that can be identified in including migrant refugees with disabilities in education through the participants' discourse concerns the matters related to developing appropriate facilities, bilingual education and the teacher's training to deal with such cases. The educational facilities for the inclusion of migrant refugees with disabilities are not sufficient to meet their needs, nor the needs of the native population, which makes

it difficult for them to be included. The country's economic condition makes it difficult to provide the necessary resources.

S4. "There are no appropriate structures initially that can provide them with the appropriate support in a psychosocial context...There is no appropriate equipment here ... Now we are trying to set up."

S10. "According to Greek legislation, all public facilities must be suitable to support these vulnerable groups. Unfortunately, however, few can... "

S19. "At the same time, learning Greek is a prerequisite for effective integration. "

Furthermore, the participating teachers pointed out the necessity of learning the Greek language. They considered it as a prerequisite for their inclusion. They believe that bilingualism creates challenges in the instructional process and the adaptation of students. Similar findings are observed for teachers' views on including migrants and refugees generally (Gkaintartzi et al., 2015; Mitits, 2018).

S2. "I think the first thing would be learning Greek. That is, although children can find a way of communicating in the game, uh, to continue in education ..."

S5. "... you cannot directly take a child and put him in a Greek school when he does not know the language; he does not know the culture; he does not know the basics of a country... "

In addition, there is a lack of qualified staff in disability and migration. Educational staff are inadequate and unqualified for such cases. This has been reported in Greek and international studies, demonstrating that educational systems are unable or not focused on the equitable inclusion of disabled migrants and refugees (Papapostolou et al., 2020; Cummins, 2021).

S4. "No, we do not! Now, we are trying to build. Because we are now starting to put in qualified staff to deal with them, this is unprecedented, and in practice, we will see how it will develop... "

S3. "Well, as I said above, I do not think there are enough qualified staff for such procedures. "

It should be pointed out here that teachers do not have a formed attitude towards including children of migrant refugees with disabilities in education. On the one hand, there is the right of the children to be included in education and to benefit from it regardless of which country they are in, and on the other hand, they are not confident that they can accept and manage the situation.

#### *4.5. Recommendations*

Through the participants' discourse, it is revealed that a state policy is established based on implementing inclusion classes that will include people with disabilities and immigrant or refugee backgrounds. At the same time, information and preparation of children is a crucial component for inclusion, and, finally, it would be sufficient to establish a national policy specialising in children with disabilities.

S1. "We should create something more suitable for them, i.e. special needs classes that would be more suited to them, as they have different morals and customs."

S4. "There should be a first reception section, a preparatory stage, a stage of preparing the child for what Greece is like, what the habits of the people are..."

S11. "...the municipality and local authorities would need to make extra expenses to make this happen, such as handicap bars and special toilets for them."

S3. "E by providing the appropriate infrastructure to help these children and the educators who would take over their education, proper toilets.

## **5. Discussion**

The purpose of the present research is to study the views of the teachers of the N. Aegean region on including PDMR and the implemented educational policies. The participants: (a) referred to the inalienable right of all to access educational resources; (b) considered that education will help the social inclusion of people in the new environment, giving them the opportunity for a new beginning in life while skills development will support PDMR in the active role they should have and the action they should take in the school context and subsequently in society; c) stressed that inclusion in education will remove social exclusion and improve the acceptance of PDMR

by members of the educational community. Native students, parents and some teachers with negative attitudes towards their inclusion or their conditional inclusion, as voiced by our research participants, through the process of education and contact and information/training that can be provided to them will improve positive attitudes and enhance social cohesion; d) I highlighted the shortcomings of educational policy for the inclusion of PDMR. There are shortcomings with the development of appropriate facilities, bilingual education and the qualification of the teacher to deal with such cases; and e) stressed that the establishment of a state policy based on the formation of inclusive classes to include PDMR, the information and preparation of such children and the qualification of the state policy are among the essential points to be considered.

In the post-modern era, the domination and control in the globalized environment and the determination of economic activity, but also the values, the ideology of the social system and the hierarchical structure of classes in society (Schuerkens, 2010; Zajda et al., 2008), shape both the context of migration flows and the conceptualization of disability, but also the treatment of migrants and disabled people by the host countries (Pisani & Grech, 2015). Institutions and practices such as education, religion, economic life, values, beliefs and politics are part of the superstructure and are influenced by neoliberal and capitalist policies (Bottomore, 1983; Giroux, 1983). Power and financial strength relations are emerging as determinants in shaping the social practices and phenomena of inclusion of PDMR (Barnes & Sheldon, 2010; Burns, 2017; 2019). The teachers in our research acknowledge that everyone has a right to education, but this remains at a superficial level. The structural weaknesses of the education system are that it fails to recognise the needs of disabled migrants, treats them in silence most of the time, does not try to invest in education for all, and transfers the responsibility to them and their families. Education policies operate in the context of restrictive economic policies, fearing the burden on education, social security and health systems (El-Lahib & Wehbi, 2012; Mirza, 2011a;b; Pisani & Grech, 2015). Thus, infrastructural weaknesses, shortcomings in training educational staff and linguistic barriers are presented as insurmountable challenges, concealing issues inherent in the system's ideology, where labour efficiency, human capital development, competitiveness and minimum cost of social expenditure and the profitability of market practices dominate (Crock et al., 2017; National Confederation of Disabled People of Greece, 2019a;b). Individuals are valued when they can participate productively in economic development. Factors such as health, time, money, and skills of cooperation with others influence the degree of ability (Ajzen, 1985). Migrant disabled people are excluded from work and social life because of their low workability.

The medical-biological approach to disability is reflected in the assessment criteria for PDMR (Elder, 2015; Soldatic et al., 2015). At the same time, the objectification of inclusion procedures, which does not consider this group's specific characteristics, is dominated by the culture of ableism. Individuals are classified into normative categories that serve class differentiation or the reproduction of social inequalities. Under the standardization of procedures, the oppressive milieu in the host country reproduces the over-socialized image of disability and migration.

Educators are alienated through this process. They cannot reaffirm their social identity and become associated with the educational process required for these individuals. They recognize the importance of the right to education, but the operation of educational policy and its ideological orientation does not allow them to take on the responsibility of inclusion. They referred to difficulties and limiting factors, transferring responsibility beyond them. Teachers are alienated because they do not determine their educational practices (teaching models, curricula, syllabuses, syllabi, etc.). Education is dominated by the ideological-political approaches that exist in the milieu and shape both the knowledge object and the educational practices and methodological approaches. The ideological-political approaches are dominated by the hegemonic discourse of the non-disabled who, through persuasion or fear, secure the consensus of teachers, thereby maintaining and reproducing the social demands of an unequal society (Althusser, 1979). The dominant ideology is embedded in the educational mechanisms that operate and represent social reality through the filter of specific ideological and political approaches. Educational policies (at national and international levels), which emerge in the context of postmodern political-social and romantic developments, shape the role of educators (Althusser, 1979; Gravaris & Papadakis, 2005) and mediate the subjectivity of teachers and their self-perception (Whitty, 2007).

### *5.1. The theoretical and practical implications*

In conclusion, there is a contradiction between the democratic nature of the education system, as expressed in public discourse, and the policies implemented as part of the alienated lives of PDMR. The teachers in our research pointed out that the right of disabled migrants to be included in education is lost in the context of evaluation criteria, inadequate educational policies and the fear of individuals resisting the dominant discourse of ableism



and hyper-socialised reality. It is, therefore, necessary to have an education policy based on social justice in which the education system will treat its members so that their accessibility to the resources provided is without difficulty and without 'filters' of rejection and marginalisation. The theoretical and practical implications of the above findings highlight the necessity of a) an educational policy that deconstructs dominant norms (ableism, cultural) and values equal accessibility opportunities and the elimination of educational exclusions; b) national studies to map the challenges of groups "hidden" behind general categorisations (e.g. vulnerable groups); c) better and more effective education and training of teachers; and d) policymakers to design implementable intercultural policies and educational leaders to design curricula and educational materials that recognise the diversity of the student population (Byram et al., 2023). It is necessary to reintroduce the debate to educational policy, highlighting the power relations and conflicts of interest inherent in it, to transform policies for disabled people and teachers. An educational policy that considers the cultural elements and experiences that individuals (teachers and students) bring with them and provides them with adequate and effective resources (Macionis, 2007). Finally, an inclusive and democratic education must be grounded in principles related to social justice, solidarity and the deconstruction of hegemonic social norms (Giavrimis, 2022).

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### ***Disclosure statement***

The author reported no potential competing interest.

### ***Ethics committee approval***

All responsibility belongs to the researchers. All parties were involved in the research of their own free will. The author declares that ethics committee approval is not required for such studies in her/his country.

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**Research article/Arařtırma makalesi**

Regional tertiary student mobility and Trkiye

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## Regional tertiary student mobility and Türkiye

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| Article Info   | Abstract  |
|--|---|
| <p><b>Research Article</b></p> <p>Received: 4 January 2023<br/>Revised: 21 June 2023<br/>Accepted: 22 July 2023</p> <p><b>Keywords:</b><br/>International tertiary students,<br/>Intra-regional internationalization strategies,<br/>Emerging countries,<br/>Türkiye</p> | <p><i>Intra-regional cooperation between emerging developing countries has represented a clear shift away from Western models of internationalization since the year 2000. As a result, more international students prefer to have higher education in countries geographically and culturally close to them. This paper aims to explore international student mobility in the context of source and destination countries/continents. Additionally, the situation of Türkiye in terms of intra-regional student mobility was also revealed and several practical implications were also discussed for the country. According to the findings, while the total share of the United States of America and the United Kingdom has decreased considerably, there have been several emerging destinations like Australia, Canada, China, and Türkiye. Türkiye has entered the global top ten destination countries through attracting international tertiary students mostly from the nearby regions.</i></p> |

### 1. Introduction

Globally, student migration grows faster than overall migration (King et al., 2010). International students refer to “non-citizens of the country they study” (OECD, 2022a). Internationally, mobile tertiary level students, also called post-secondary students, increased from 107,000 in 1950 (Barnett & Wu, 1995) to 1.6 million in 2000 (Project Atlas, 2020). Since then, the flow of international students has become immense – exceeding 6 million in 2020 (OECD, 2022). The human capital explanation assumes that increasing international student mobility is linked with the rising demand for high-skilled professionals with tertiary-level education, particularly from industrialized countries. The rising demand prompts national students to seek education and work opportunities abroad (Portnoi et al., 2010).

Until recently, the United States of America and the United Kingdom were always the top two destinations for student mobility until very recently. Nevertheless, mobility patterns in international education have had a clear shift away from Western models of internalization (De Wit et al., 2015). Increasingly international students prefer higher education in countries geographically and culturally close to them. As a result, the intra-regional mobility of tertiary students among several emerging countries has increased significantly in the last decade (Kondakci et al., 2017). Besides the United States of America and the United Kingdom, several emerging destinations have been like Australia, Canada, China, Türkiye, Russia, and the United Arab Emirates. Meanwhile, China, Türkiye, Russia, and the United Arab Emirates entered the top global destination countries for international tertiary students in the last decade, according to a report published by (The Department of Education, Skills and Employment of Australia, 2019) Türkiye, Netherlands, United Arab Emirates, and Saudi Arabia as four countries have been classified in the fast-growing ‘Promising’ emerging destinations for international tertiary students. These emerging hubs attract many international students from neighboring countries in the same region. Meanwhile, Asian countries have strengthened their receiver role, on the other hand, African countries have remained source countries in international student mobility (Barnett et al., 2015).

\* Ethics committee approval is not required as the data used in this study is based on the Organization for Economic Cooperation and Development (OECD) international student mobility database. All responsibility belongs to the researchers. All parties were involved in the research of their own free will.

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The immense increase in international student flow and significant changes in mobility patterns have started to change the lack of attention of public and international organizations and academicians to international student mobility (King et al., 2010). For instance, OECD has started to publish annual student mobility reports since 2001. The United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Organization for Migration (IOM) also publish internationalization of higher and skilled migration reports.

Nevertheless, the internationalization of higher education has also several risks as well. A very small fraction of local students has a chance to go abroad to continue their studies due to limited financial resources and language barriers. Furthermore, it is also difficult to assess or recognize the quality of higher education programs offered by foreign institutions (Marinoni, 2019). Moreover, imbalances of international student flow and the absence of multiple perspectives and voices are some other unintended consequences (De Wit et al., 2017). Apart from that, commercializing of higher education occurring through tuition fees and indirectly is a further arising problem (Marinoni, 2019).

Overall, this paper focuses mainly on the following research questions from the perspective of international tertiary students;

- Which continents and countries are the most popular destinations?
- Which continents and countries are the major origin countries?
- Which academic fields are the most preferred by international students based on countries?
- What is the situation of Türkiye in terms of international students?

## **2. Intra-regional internalization strategies in higher education**

“Regional identity” can be built by developing and strengthening the ideas and values specific to the regions where societies are geographically and culturally close. Regional identity cannot be substituted for national identity because it is an integral element of national identity. Countries that can come together under a common regional identity form a basis for cooperation in different fields, especially in security, politics, trade, education, and culture. Altbach and Knight (2007) argued that internationalization in higher education is not merely an issue for developed countries but also an increasing number of emerging economies. Richters and Teichler (2006) indicated that even though nationality remains a significant descriptor, it is not as significant as it used to be for mobility. A social network analysis conducted by Kondakci et al. (2017) on a dataset covering 229 countries also indicated the rise of several emerging regional hubs (ERHs). The authors argued that these ERHs deviate from traditional internationalization processes by differentiating forms and with rationalities. For instance, while Türkiye attracts students from the Middle East, the Caucasus, the Balkans, and Central Asia, Mexico attracts students from Latin America, South Korea from Southeast Asia, and South Africa from Sub-Saharan Africa were highlighted as critical emergent hubs in their respective regions.

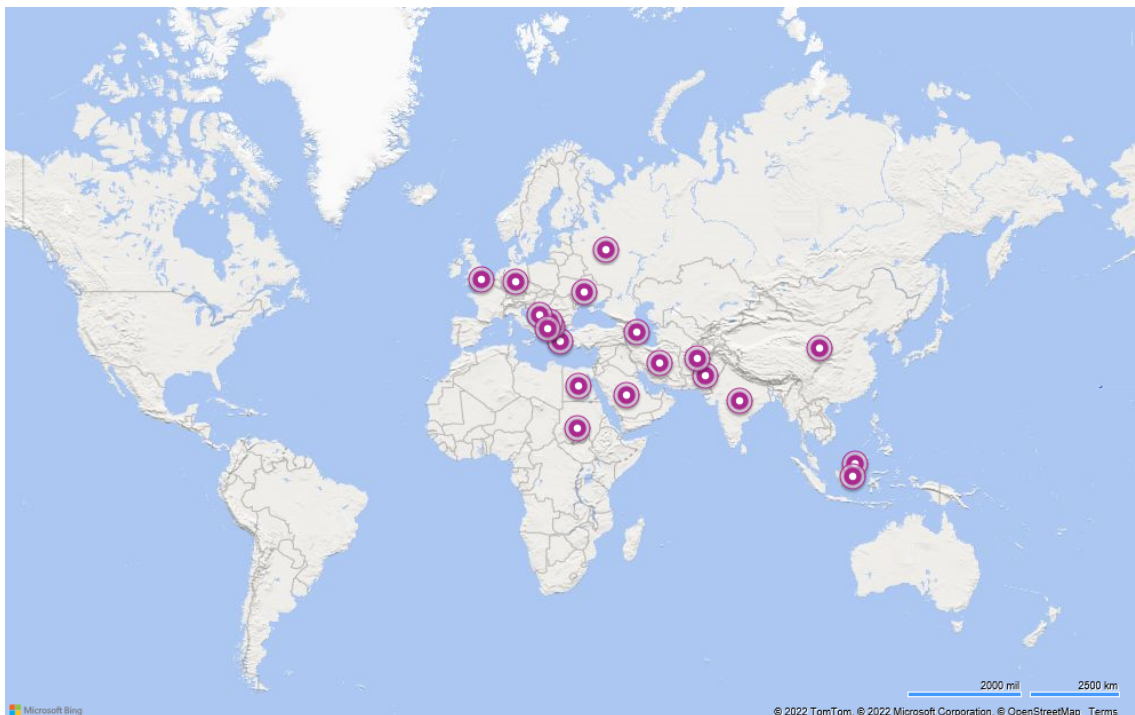
The European Union, the African Union, the Organization of Turkic States, and the Association of Southeast Asian Nations (ASEAN) are some examples of regional identity construction. For instance, the Association of Southeast Asian Nations (ASEAN) was formed by Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam to increase cooperation between countries in the same geographical region. These unions are also an example of “intra-regional internationalization” (De Wit, 2020). Regional identity has a close relationship with the internationalization of higher education. Increasing international student and academic staff mobility contributes to regional identity building by increasing information exchange, cooperation, and cultural interaction between individuals and regional countries (Knight, 2012). By adding a regional dimension to higher education strategies, scientific, cultural, social, economic, and political collaborations are strengthened among regional countries with a common language, religion, culture, history, or values (Metin, 2022).

The main strategies to attract highly skilled migrants are as follows; (a) employer-oriented selection strategy, (b) sector-based selection strategy, and (c) individual human capital scoring strategy. In the employer-oriented strategy, recruitment processes such as preparing the documents for obtaining visas and work and residence permits on behalf of migrants are carried out by employers. The H-1B visa type applied in the USA is one example of an employer-oriented selection strategy. In the sector-based selection strategy, priority sectors that need a qualified workforce are determined by countries. Governments arrange employment incentives to facilitate the recruitment of highly skilled migrants in the identified sectors. The German Green Card application, prepared for the information technologies sector in Germany in the early 2000s, can be an example. In the individual human capital

scoring strategy, governments use several ranking systems to assess skills, education, language ability, work experiences, and other profiles of candidate foreign migrants. This method is applied mainly by Canada, the United Kingdom, and the Czech Republic (Sarcan, 2022). Countries with widely spoken languages or organizations using an international language and offering high wages are more likely to attract migrants than countries with unique languages and moderate wages (Chaloff & Lemaître, 2009). The Bologna process was launched in 1999 to align with the European Union's regional strategies. The Bologna process continues under the name of ERASMUS+ to promote student and academician exchange programs and facilitate employability between the region's countries. Aligned with the ERASMUS+, the European Higher Education Area (EHEA) was launched in 2010 and established by the European Union to ensure more comparable, compatible, and coherent European higher education systems. The general objectives of EHEA are providing mutual recognition of higher education diplomas, increasing inter-university agreements, and strengthening the quality assurance systems of the countries (Aba, 2014).

For Türkiye, regional strategies are being developed by the Council of Higher Education of Türkiye (CoHE) to encourage intra-regional student and academic staff mobility. The target regions of Türkiye cover geographies close to Anatolia, mainly the Balkans (Albania, Bosnia and Herzegovina, Greece, Kosovo, Macedonia), the Middle East (Saudi Arabia), Southwest Asia (Afghanistan, China, India, Indonesia, Malaysia, Pakistan), the Caucasus (Azerbaijan, Iran, Russia, Ukraine) and Northeast Africa (Egypt, Sudan). Besides these regions, England and Germany are also on the list of target countries of Türkiye for international students (The Higher Education Council of Türkiye, 2021). In determining the target countries by CoHE, strategies have been formed with the contribution of the Ministry of Foreign Affairs and the Ministry of National Education, the Strategy and Budget Directorate, the Ministry of Science, Industry, and Technology, the Ministry of Culture and Tourism, the Ministry of Health, the Ministry of Youth and Sports and the Ministry of Trade. On the other hand, the internationalization strategies determined by the universities were also considered, and a foresight was created about the cooperation with the countries (The Higher Education Council of Türkiye, 2021).

Figure 1. Target countries of Türkiye for international students



Source: Higher Education Council of Türkiye (2021)

Bologna Process, Erasmus+ programs, Türkiye Scholarships, MEVLANA Exchange Program, Joint Diploma programs, Project-Based International Exchange Program, TURQUAS Project, “Study in Turkey” project, School Recognition, and Equivalency Regulation, the extension of the duration of stay of doctoral students after graduation, and the start of the CoHE granting scholarships to international students are some of the significant initiatives that have strengthened intra-regional cooperation process of Türkiye (The Higher Education Council of Türkiye, 2021).

This paper uses descriptive data sources from OECD to analyze worldwide international student mobility. The purpose, scope, data collection, and analysis approaches were explained in the following section of this paper.

### 3. Methodology

In this study, international tertiary student mobility patterns are demonstrated by field of study and country of destination and origin to provide a larger picture of international student flows. More precisely, this study aims to underline the limitations of traditional internationalization approaches to explain the vibrant state of key ERHs, particularity of Türkiye. Tertiary education includes what is commonly understood as academic education but also includes advanced vocational or professional education. It comprises the International Standard Classification of Education (ISCED) levels 5, 6, 7 and 8. ISCED is the classification of education levels for compiling international educational statistics. The tertiary levels 5,6,7, and 8 are labeled as short-cycle tertiary education, Bachelor's or equivalent level, Master's or equivalent level, and doctoral or equivalent level, respectively (OECD, 2015). International students could be described as students who obtained their prior education in their country of origin. International tertiary-level students leave their country of origin and move to another country for short-cycle tertiary education, bachelor's, master's, or doctoral-level education. (OECD, Education at a Glance 2021: OECD Indicators, 2022a).

The data used in this research is based on the international student mobility database of the Organisation for Economic Co-operation and Development (OECD). The OECD Education at a Glance database provides data on the state of education across OECD countries and partner countries. The database contains tertiary education data from the countries and has been updated yearly since 2000. The educational attainment profiles of the countries are classified according to the International Standard Classification of Education (ISCED) coding system. More precisely, this study used the international student mobility indicator of OECD. The indicator shows the percentage of students from each continent and country of origin over the total number of international students. Additionally, the classification of fields of education and training was assembled according to the International Standard Classification of Education: Fields of Education and Training 2013 (ISCED-F). ISCED-F 2013 is an international framework for organizing educational programs and related qualifications by field. The indicator of the share of international students by field was also used to figure out the most popular fields among international inbound students at both continent and country levels.

Table 1. Top destination countries and fields for international inbound students (2000 – 2019)

| Country              | Year 2000 (%)* | Year 2019 (%)** | Number of inbound students (2019)** | The most popular fields among international inbound students (2019)*** |                                      |   |                        |   |
|----------------------|----------------|-----------------|-------------------------------------|--|--------------------------------------|---|------------------------|---|
|                      |                |                 |                                     | Arts and humanities (%)  | Business, administration and law (%) | Engineering, manufacturing and construction (%) | Health and welfare (%) | Social sciences, journalism and information (%) |
| United States        | 28             | 16.0            | 976,853                             | n/a  | n/a                                  | n/a   | n/a                    | n/a   |
| Australia            | 7              | 8.4             | 509,160                             | 6  | 47                                   | 12  | 9                      | 3   |
| United Kingdom       | 14             | 8.0             | 489,019                             | 13   | 33                                   | 14  | 7                      | 12  |
| Germany              | 12             | 5.5             | 333,233                             | 15   | 18                                   | 30  | 6                      | 8   |
| Russia               | n/a            | 4.6             | 282,922                             | n/a  | n/a                                  | n/a   | n/a                    | n/a   |
| Canada               | 2              | 4.6             | 279,168                             | 8  | 27                                   | 18  | 5                      | 9   |
| France               | 8              | 4.0             | 246,378                             | 16   | 29                                   | 16  | 6                      | 10  |
| United Arab Emirates | n/a            | 3.7             | 225,339                             | n/a  | n/a                                  | n/a   | n/a                    | n/a   |
| Japan                | 4              | 3.3             | 202,907                             | n/a  | n/a                                  | n/a   | n/a                    | n/a   |
| China                | n/a            | 3.3             | 201,177                             | n/a  | n/a                                  | n/a   | n/a                    | n/a   |
| Türkiye              | n/a            | 2.5             | 154,505                             | 13   | 19                                   | 25  | 13                     | 13  |
| Spain                | 3              | 1.3             | 77,062                              | 9  | 25                                   | 12  | 22                     | 12  |
| Austria              | 2              | 1.2             | 74,631                              | 14   | 20                                   | 16  | 9                      | 16  |
| Belgium              | 2              | 0.9             | 52,143                              | 14   | 14                                   | 9   | 37                     | 10  |
| Others               | 18             | 32.6            | 1,989,430                           | n/a  | n/a                                  | n/a   | n/a                    | n/a   |

\* Source: (Project Atlas, 2020)

\*\* Source: (OECD, International student matrix by country of origin and country of destination, 2022b)

\*\*\* Source: (OECD, Share of international students and all students by field, 2021c)

n/a: not available in the reference year



#### 4. Changing target and origin countries for international tertiary students

The trend of destination countries for international tertiary students has changed significantly since 2000. According to Table 1, there were around 1.6 million inbound higher education students in 2000. This number reached 6,093,927 in 2019 (OECD, 2022b). During this period, there have been significant changes in countries' shares. Approximately 43 percent decrease in the total shares of the United States and the United Kingdom takes attention. These two countries held 42 percent of the total international students in 2000, which fell to 24 percent in 2019. The most significant decreases in inbound higher education student shares occur in Germany at 54 percent and France at 50 percent.

Meanwhile, several emerging destinations in the global student flow include Russia, Canada, United Arab Emirates, China, and Türkiye. While Russia, United Arab Emirates, China, and Türkiye entered the list from the fifth, seventh, ninth, and eleventh places, respectively, Spain, Austria, and Belgium are no longer in the top ten list. Additionally, the international student share of Canada has considerably risen between 2000 and 2019 from 2 percent to 4.6 percent, which in turn, Canada has become the sixth most popular destination for international tertiary students in the world. Besides Canada, Australia is the only developed country that increased its international tertiary student share. Lastly, the shares of all other countries have reached 32.6 percent rising 81 percent between 2000 and 2019. This significant increase highlights a significant diversification trend in destination country preferences of international tertiary students.

##### 4.1. The most popular education fields in the most popular countries

According to Table 1, the most popular fields in which international tertiary students complete their studies differ from country to country. In most countries, business administration and law is the most popular field for international students. Principally, in Australia, the second largest host country for international students in the world, 47 percent of the foreign students, accounting for almost 250,000 individuals, study business, administration, and law. The United Kingdom, France, and Canada are the other popular destinations for this field. Besides that, engineering, manufacturing, and construction is the most popular field for international students in Germany and Türkiye. In addition, Spain stands out in health and welfare, with 37 percent for international tertiary students.

Apart from these, when the figures of international students as a percentage of total higher education are evaluated, countries that host the largest shares of international students in comparison to their total higher education populations are listed as follows Australia 31.3%, Canada 23.7%, the U.K. 22.3%, New Zealand 13.5%, France 13.4%, and Netherlands 13.2% (Project Atlas, 2020). Australia has the highest ratio of international students per head of population globally by a large margin.

##### 4.2. Major origin continents of the most popular countries

When we look at the origins of international tertiary students, more than fifty percent of them come from Asian countries. The top three most popular destinations for Asian students are the United States of America, Australia, and the United Kingdom. For European students, the United Kingdom is the most popular destination, followed by Germany and the United States of America. Meanwhile, African tertiary students mostly prefer to study in France by a large margin. Students from Latin America and the Caribbean countries mainly desire to complete their studies in United States of America.

Table 2. Inbound international student matrix by country of destination and continent of origin

| Global top ten destination countries | Total     | Continent of origin |           |         |                                 |                  |         |                     |
|--------------------------------------|-----------|---------------------|-----------|---------|---------------------------------|------------------|---------|---------------------|
|                                      |           | Asia                | Europe    | Africa  | Latin America and the Caribbean | Northern America | Oceania | Areas not specified |
| United States                        | 976,853   | 748,532             | 66,937    | 47,864  | 79,515                          | 26,889           | 7,115   | 1                   |
| Australia                            | 509,160   | 439,706             | 16,014    | 10,971  | 20,004                          | 6,446            | 3,950   | 12,069              |
| United Kingdom                       | 489,019   | 269,355             | 150,761   | 29,302  | 10,214                          | 26,583           | 2,804   | 0                   |
| Germany                              | 333,233   | 127,962             | 122,139   | 31,028  | 16,678                          | 9,796            | 1,532   | 24,098              |
| Russia                               | 282,922   | 217,991             | 41,426    | 13,047  | 1,738                           | 243              | 21      | 8,456               |
| Canada                               | 279,168   | 194,274             | 27,519    | 25,848  | 16,722                          | 9,504            | 729     | 4,572               |
| France                               | 246,378   | 54,402              | 40,767    | 123,385 | 15,406                          | 4,622            | 258     | 7,538               |
| Japan                                | 202,907   | 190,083             | 5,740     | 2,190   | 1,311                           | 2,849            | 723     | 11                  |
| Türkiye                              | 154,505   | 110,769             | 20,229    | 21,564  | 324                             | 822              | 118     | 679                 |
| Total                                | 6,093,927 | 3,137,706           | 1,031,578 | 555,195 | 403,414                         | 152,777          | 31,850  | 781,403             |

Source: (OECD, International student matrix by country of origin and country of destination, 2022b)

Lastly, for Northern American students, the United States of America and the United Kingdom are the two main destination countries. Apart from these, except in France, Germany, and the United Kingdom, Asian students account for more than 70 percent of international students. Origin continent balance of Germany takes attention (Please see Table 2. Inbound international student matrix by country of destination and continent of origin for more details).

#### 4.3. Major origin countries of the most popular countries

When we look closely at the top three origin countries of the global top ten destination countries for tertiary students, there are fifteen origin countries listed in Table 3. China as a source country is in the top three list for all top ten destination countries besides Russia and Türkiye. Russia's major source countries are Kazakhstan, Turkmenistan, and Uzbekistan correspondingly. Furthermore, almost half of the inbound students from the United States of America, Australia, Canada, and Japan come from China and India. The hegemony of Chinese students in Japan also takes attention with 45.1 percent. Lastly, it is also noteworthy that France and particularly Germany have no dominant source of country for inbound international students. Considering the situation of Türkiye in this field, Kılınç et al. (2021) mentioned the changes in the global student flows. It underlined the increasing share of Türkiye in the global arena. The authors claimed that the significant rise in the number of international students in Türkiye is mainly related to the effects of instability in the country's hinterland. Additionally, Şimşek and Bakır (2016) argued that the major source countries of Türkiye are Turkic republics such as Kazakhstan and Uzbekistan and African countries.

Table 3. Inbound international student matrix by top ten country of destinations and origins

| Global top ten destination countries* | Top three origin countries (%) |      |      |      |      |     |      |      |      |      |     |     |     |     |     |
|---------------------------------------|--------------------------------|------|------|------|------|-----|------|------|------|------|-----|-----|-----|-----|-----|
|                                       | CN                             | IN   | KZ   | TM   | VN   | NP  | SY   | MA   | AZ   | DZ   | UZ  | F   | KR  | US  | A   |
| United States                         | 34.8                           | 13.6 |      |      |      |     |      |      |      |      |     |     | 5.1 |     |     |
| Australia                             | 30.6                           | 18.3 |      |      |      | 8.2 |      |      |      |      |     |     |     |     |     |
| United Kingdom                        | 25.0                           | 5.6  |      |      |      |     |      |      |      |      |     |     |     | 4.0 |     |
| Germany                               | 9.7                            | 5.6  |      |      |      |     |      |      |      |      |     |     |     |     | 3.9 |
| Russia                                |                                |      | 25.2 | 9.9  |      |     |      |      |      |      | 9.7 |     |     |     |     |
| Canada                                | 27.1                           | 26.6 |      |      |      |     |      |      |      |      |     | 6.3 |     |     |     |
| France                                | 9.5                            |      |      |      |      |     |      | 12.7 |      | 10.0 |     |     |     |     |     |
| Japan                                 | 45.1                           |      |      |      | 20.0 | 7.4 |      |      |      |      |     |     |     |     |     |
| Türkiye                               |                                |      |      | 11.4 |      |     | 17.5 |      | 12.5 |      |     |     |     |     |     |

CN: China, IN: India, KZ: Kazakhstan, TM: Turkmenistan, VN: Vietnam, NP: Nepal, SY: Syria, MA: Morocco, AZ: Azerbaijan, DZ: Algeria, UZ: Uzbekistan, F: France, KR: Republic of Korea, US: United States of America, A: Austria  
Source: (OECD, Enrolment of international students by country of origin, 2021a)

Nevertheless, for Türkiye, the major origin countries are Syria, Azerbaijan, and Turkmenistan, respectively, and except for Syria, there is no instability in the other main source countries of Türkiye (Please see Table 3). Furthermore, the major origin continents of Türkiye for international students are Asia (71.7%), Africa (13.9%), and Europe (13.1%). The rate of European students pays attention here. Aydemir (2011) noted that many international students coming to Türkiye from European countries are Turkish citizens born abroad.

Thus far, destination countries of international students are mentioned mostly. In Table 4, the origin countries of international students are displayed to provide a further point of view. At first glance, Asian countries draw attention, particularly China and India are by far the two countries that send the highest number of higher education students abroad in Table 4. Parenthetically, Germany, France, and the United States of America are in the top ten in both destination and origin country lists. Lastly, Turkmenistan and Kazakhstan significantly draw attention with high ratios of their number of outbound students by the total population. For instance, there were 46 thousand outbound students from Turkmenistan, with six million populations. The ratio of outbound students per population reaches 77 per thousand.

A total of 25,663 Turkish students (outbound) were abroad to complete their tertiary-level studies in 2019. Meanwhile, there were 154,505 international tertiary students (inbound) in Türkiye in the same year (OECD, Enrolment of international students by country of origin, 2021a). The net flow ratio of internationally mobile students (inbound - outbound) of Türkiye is positive with a high margin. The numbers indicate that Türkiye receives six times more international students than it sends abroad. Apart from these, Metin (2022) identified ten target countries where Türkiye has a very high potential to increase the number of international students and thus

export education services. These countries are listed as Kazakhstan, Uzbekistan, Ukraine, Russia, Saudi Arabia, Nigeria, Morocco, Pakistan, Bangladesh, and Indonesia.

Table 4. Leading origin countries of international tertiary students

| No | Country of origin | Number of outbound students* | Population (in millions)** | Ratio Per Thousand (‰) |
|----|-------------------|------------------------------|----------------------------|------------------------|
| 1  | China             | 859,718                      | 1,402                      | 0.6                    |
| 2  | India             | 305,251                      | 1,380                      | 2                      |
| 3  | Vietnam           | 112,531                      | 97                         | 12                     |
| 4  | Germany           | 92,814                       | 83                         | 11                     |
| 5  | Republic of Korea | 84,780                       | 51                         | 17                     |
| 6  | Kazakhstan        | 82,356                       | 18                         | 46                     |
| 7  | Nepal             | 76,795                       | 29                         | 26                     |
| 8  | France            | 67,035                       | 67                         | 10                     |
| 9  | Ukraine           | 66,321                       | 44                         | 15                     |
| 10 | United States     | 63,063                       | 329                        | 2                      |
| 11 | Italy             | 55,699                       | 59                         | 9                      |
| 12 | Saudi Arabia      | 54,582                       | 34                         | 16                     |
| 13 | Malaysia          | 46,675                       | 32                         | 15                     |
| 14 | Turkmenistan      | 46,038                       | 6                          | 77                     |
| 15 | Canada            | 43,201                       | 38                         | 11                     |
| 33 | Türkiye           | 25,663                       | 84                         | 3                      |

\*Source: (OECD, Enrolment of international students by country of origin, 2021a)

\*\*Source: (The World Bank, 2021)

## 5. Conclusions and discussions

### 5.1. Main findings and theoretical contributions

Even though many countries perceive Europe and the United States of America as critical partners, intra-regional and South-South cooperation between several emerging countries represents a clear shift in the focus away from Western models of internationalization (De Wit et al., 2015). Regional strategic collaborations can also pave the way for the formation of “regional isomorphism” that will be built based on the needs of regions rather than a single global isomorphism in higher education. In this way, the visibility of some regional best practices may also increase in other parts of the world. Thus, the global education system can take on a more multicultural and diverse structure by feeding not only on Western values and practices but also on practices from different parts of the world. Countries that can implement unique internationalization strategies by blending local and regional societies' economic, social, cultural, political, and technological needs will achieve a sustainable competitive advantage in higher education.

Since 2000, the top ten popular destinations for international students have changed significantly. While Russia, United Arab Emirates, China, and Türkiye entered the list from the fifth, seventh, ninth, and eleventh places, respectively, Spain, Austria, and Belgium are no longer in the top ten list. Additionally, the international student share of Canada has considerably risen between 2000 and 2019 from 2 percent to 4.6 percent, which in turn, Canada has become the sixth most popular destination for international tertiary students in the world. Besides Canada, Australia is the only developed country that increased its international tertiary student share. As a result, Australia has become the second most popular country for international tertiary students.

From a geographic perspective, international student mobility literature focuses on the mobility between countries. Nevertheless, regional dynamics, such as current and historical ties between countries in close regions, influence international student mobility. Therefore, this paper also evaluated student mobility by adding a continent dimension. Türkiye has strong historical and cultural ties with the Balkans, Caucasus, Central Asia, Middle East, North and Sub-Saharan Africa, and South Asia. Because regional internationalization gains importance worldwide, strengthening Türkiye's geographically and culturally close ties offers a strategic advantage in attracting more international students to Türkiye. In fact, Türkiye has been turning this strategic advantage into an opportunity, especially since 2010. Regional internationalization strategies of Türkiye have attracted around 300.000 international students from nearby geographies. Türkiye has taken place among the top ten countries international students prefer. According to the findings of this paper, Asian students lead with a rate of 71% among international

university students coming to Türkiye. Interestingly, the rate of African students (13.9%) and European students (13.1%) were close to each other in Türkiye.

### 5.1. Practical implications

The most popular subjects for international students in Türkiye engineering, manufacturing, and construction (25%) and business, administration, and law (19%). Türkiye's rapid growth in the engineering, manufacturing and construction sectors may also have been a factor that increased the rate of international students choosing these fields. A strategic target for Türkiye could be that specific disciplines or topics, which are significant for Türkiye, such as medicine, computer engineering, electronic engineering, and mechatronic engineering, could be identified, and successful international students could be funded in these programs.

In the near future, Türkiye could target several countries to increase its market share in the short run. For instance, more than 50 thousand students from Kazakhstan, Uzbekistan, Ukraine, Russia, Saudi Arabia, Nigeria, Morocco, Pakistan, Bangladesh, and Indonesia have higher education abroad. Most of these countries are geographically and/or culturally close to Türkiye. Nevertheless, it has been observed that five of these ten countries were not among *the priority target countries* determined within the scope of "The Target-Oriented Internationalization in Higher Education" project published by CoHE in June 2021. Thus, focusing on the aforementioned five additional countries can increase the number of international students in Türkiye.

Lastly, the internationalization of higher education also has several risks, such as quality assurance issues, commercializing of higher education, and educational inequality access to higher education except by elites. Indeed, compromising the quality of education to increase income from 'education', particularly by decreasing the acceptance levels of students, may result in unqualified higher education graduates. Therefore, quality and quantity expectations should be balanced in higher education strategies at the country and institutional levels. In other words, higher education institutions should not compromise on the quality of education while targeting to increase the number of international students, particularly in emerging countries like Türkiye. In this regard, the education outcomes of international students should be closely monitored and evaluated by explicit targets. Monitoring graduation rates of international students, transcript of records (grade-point averages), and employability of new graduates could be some examples of explicit targets.

### 5.2. Limitations and future directions

Some international students may prefer to reside and work in Türkiye after graduation. Thus, future research could be conducted to figure out the brain gain rates of Türkiye by international graduates. Both countries of origin and educational fields could also calculate the brain gain rates of Türkiye through international graduates. To achieve that, the higher education graduation data of CoHE and the international labor force work permit data of the Labour and Social Security General Directorate could be integrated to figure out how many international graduates from which educational fields

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### Author contribution statements

The author contributed to the research's design and implementation, the results, the analysis, and the manuscript's writing.

### Disclosure statement

The author reported no potential conflict of interest.

### Ethics committee approval

Ethics committee approval is not required as the data used in this study is based on the Organization for Economic Cooperation and Development (OECD) international student mobility database. All violations arising from this article are the responsibility of the author(s). In addition, the comments regarding the findings obtained within the scope of this research belong only to the researchers and do not impose any responsibility on the Turkish Statistical Institute.

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**Research article/Arařtırma makalesi**

"Short-Circuit" L1 use in pre-reading activities and its effects on L2 reading  
comprehension and focus-on-vocabulary learning

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## "Short-Circuit" L1 use in pre-reading activities and its effects on L2 reading comprehension and focus-on-vocabulary learning

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| Article Info  | Abstract  |
|---|---|
| <p><b>Research Article</b></p> <p>Received: 11 April 2023<br/>Revised: 22 June 2023<br/>Accepted: 21 July 2023</p> <p><b>Keywords:</b><br/>Reading skills,<br/>Short-circuit,<br/>Pre-reading,<br/>Focus-on-vocabulary,<br/>Reading comprehension</p> | <p>This study explores the effect of categorically different pre-reading activities in learners' L1 on reading comprehension and learning of focus-on-vocabulary. The participants were sixty Turkish EFL learners attending a state high school, and the data was gathered from their achievement test scores. We analyzed the data through one-way multivariate analysis of variance (MANOVA) and implemented t-test statistical procedures. The findings revealed that the treatment group, who were exposed to pre-reading activities in L1, obtained better results both in reading comprehension and focus-on-vocabulary activities than the control group. The positive effect of implementing the 'short-circuit' L1 use in pre-reading activities for reading comprehension and focus-on-vocabulary exercises was observed. It was also seen that categorically different pre-reading activities enhanced EFL learners' reading comprehension and vocabulary learning.</p> |

### 1. Introduction

Reading is a challenging language skill with its complex nature, which requires cognitive demands for language learners. (Bernhardt, 2004; Afflerbach et al., 2008; Bernhardt, 2011; Ghafar & Dehqan, 2012; Kilpatrick et al., 2019). In a reading class, the fundamental aim is to comprehend the intended message by interacting with it and extracting meaning (Lestrud, 2013). However, reading texts may include unfamiliar concepts and vocabulary which may impede comprehension (Taglieber et al., 1988). Hence, readers must adopt distinct strategies to overcome these boundaries while reading. Common to all, they try to build connections with their existing prior knowledge and with what is new to them (Aron, 1986). This existing knowledge, referred to as background knowledge, comprises all experiences of the reader, including language.

Melendez & Pritchard (1985) developed cultural schemata theory based on the notion of readers' cultural background. Their theory suggests that previous knowledge is organized into units of home and target culture within formal and informal structures. Research also identified formal and content schemas within a narrow and broad sense. Formal schema, which includes various structural usages of language (poetry, academic articles, stories, and scientific texts), refers to the background knowledge that is related to rhetorical structures (Carrel, 1987); on the other hand, content schema refers to more general concepts related to the readers' background knowledge about the world, the universe, people, and culture (Carrel & Eisterhold, 1983). This knowledge of the schema has also been investigated in language teaching and learning contexts. Finding relevant texts to activate language learners' background knowledge has been a challenging task for teachers (Cook, 1997). Research has evidenced that the top-down and bottom-up processes are utilized in activating learners' backgrounds in a broader sense

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knowledge. The top-down process refers to a holistic way in which the primary aim is to activate learners' background knowledge to predict and understand the given text. On the other hand, the bottom-up process refers to the decoding of individual words and sentences to predict and understand the given text (Gass & Davey, 1981).

Considering the language proficiency of L2 learners, an interplay between the top-down and bottom-up processes is considered an effective way of improving second language reading comprehension (Verhoeven, 1990; Lee & Schallert, 1997; Lee, 2009). Hence, providing different activities by combining and conforming to the content of the text with the background knowledge of the learners is a beneficial way to activate learners' background schemata (Lee, 2009). According to Barnhardt (2011), pre-reading activities with this respect are key strategies for activating language learners' background knowledge and assisting them in understanding the gist of the text. Further to that, these activities assist them in aligning the structures and vocabulary with the main idea in the text (Bilokcuoğlu, 2011).

Pre-reading activities are defined as a set of pedagogical techniques that are used to prepare language learners for the while-reading process or the whole text. These activities are designed to assist language learners to process the reading text in a more concrete way (Tudor, 1990). Tudor (1989) identified seven distinct categories of pre-reading activities based on a corpus analysis of 23 ELT coursebooks. He aimed to provide a framework for language teachers with a wide range of options to develop pre-reading materials. Table 1 depicts this categorization of pre-reading activities and their formats.

Table 1. Categories of pre-reading activities.

| Categories                        | Formats  |
|-----------------------------------|--|
| 1. Vocabulary priming             | a. Word list without definitions<br>b. Word list with definitions<br>c. Vocabulary-based prediction          |
| 2. Purpose setting questions      | a. Purpose questions<br>b. Comprehension questions   |
| 3. Text-based prediction          | a. Selective text processing<br>b. Skim read<br>c. Information focus   |
| 4. Content organizers             | a. Background information provision (Text source, Text topic, Topic relevant information)<br>b. Text summary |
| 5. Pre-questions                  | a. Factual elicitation<br>b. Personal response<br>c. Aided personal response                                 |
| 6. Metalinguistic focus           | a. The written word II<br>b. Discovering discourse<br>c. Discourse in action                                 |
| 7. Integrated reading preparation | a. Complex pre-reading<br>b. Thematic units  |

Adapted from/Source: Tudor (1989, p. 327)

Vocabulary learning and reading skills are interrelated. According to Erten (2018), this interrelatedness is unidirectional which contributes one to another. Wesche & Paribakht (2002) argue that reading comprehension tasks yield tangible benefits for learners in learning different features of the words with the aim of enhancing vocabulary knowledge in those reading tasks. On the other hand, Tierney et al. (1985) claim that when keywords are introduced beforehand to the learners, it is likely that they construct the meaning from the reading text in a productive way.

Pre-reading activities not only engage the learner's background knowledge of the given text but also establish a link between the keywords of the text and their existing vocabulary knowledge. For Pittelman and Johnson (1984), the major objective of curriculum designers in pre-reading activities is to activate the learner's existing conceptual framework by offering new connections to develop a relationship between the familiar and the unknown. Nunan (2015) also claims that focusing on essential vocabulary in pre-reading activities assists learners in preparing for an unfamiliar reading text.

Previous research has found evidence of the priming effects of pre-reading activities on language learners' reading comprehension and vocabulary growth (Rasouli et al., 2019; Bilokcuoğlu, 2011; Alessi, & Dwyer, 2008; Ajideh, 2006; Tudor, 1989; Hudson, 1982). Most of these studies were based on activating the background knowledge of language learners using a variety of different techniques or strategies. Although researchers suggest



that using pre-reading activities facilitate reading comprehension and vocabulary development, the use of L2 in the pre-reading activities may fail to activate the relevant schemata in the EFL learners' minds. The use of L1 is a pre-eminent concern in foreign language teaching and learning contexts (Swain & Lapkin, 2000; Turnbull, 2001; Storch & Wigglesworth, 2003; Seng & Hashim, 2006; Greggio & Gil, 2007) and the reawakening of L1 use after strong opposition to traditional methods has aroused much interest among researchers.

Recent trends in second and foreign language teaching; particularly, translanguaging (Vogel & García, 2017; Wei, 2018; Wei & García, 2022), trans-foreign-languaging (Nijhawan, 2022) or multilanguaging (Sauer, 2020) reconceptualized and rationalize the use of L1 viewing its use as a transcendent area where learners switch between and among their linguistic repertoires without linguistic boundaries (Otheguy, García & Reid, 2015). However, in many EFL contexts, the use of L1 is still excluded from their teaching practices since it is considered to provoke L1 interference (Liu et al., 2004). Our study, therefore, focuses on uncovering whether the 'short-circuit' L1 use of EFL learners in pre-reading activities will make a difference in L2 reading comprehension and vocabulary learning.

## **2. Literature review**

There is a plethora of research on pre-reading activities and their effects on learners' reading comprehension and vocabulary learning (Hudson, 1982; Tudor, 1990; Taglieber et al, 1988; Ajideh, 2006; Alemi & Ebadi, 2010; Mihara, 2011; Bilokcuoğlu, 2011; Sousa, 2012; Azizifar et al., 2015; Hashemi et al., 2016); Rasouli et, al., 2019). These activities induce learners' background knowledge related to the reading content. According to Melendez and Pritchard (1985), pre-reading activities help learners prepare cognitively for while-reading activities and activate their proper schemata. In what follows, we classified the literature first on the studies on categorically different types of pre-reading activities and vocabulary knowledge in reading comprehension.

### *2.1. Categorically different types of pre-reading activities*

The effect of categorically different pre-reading activities on learners' reading comprehension was investigated in ESL and EFL contexts within experimental research designs. Hudson (1982), in his study, compared the pre-reading activities of pre-reading (PRE), vocabulary (VOC), and read test (RT) within a repeated measures design. Each pre-reading activity was implemented consecutively, and a test was administered to the learners. Compared to the other two pre-reading activities: vocabulary and read test, he found that ESL learners attending an intensive language institute at the beginning, middle, and advanced levels displayed progress in their reading comprehension with pre-reading exercises. Tudor (1990) investigated the effect of four different content-schema-oriented pre-reading activities: summary, pre-questions, topic, and vocabulary, on the reading comprehension proficiency levels of (low, middle, and high) EFL French university students. Within two experiments, he used a text summary and a set of pre-questions in the first experiment and a topic prediction and a vocabulary-based task in the second experiment to gauge the level of learners' activation of their background knowledge regarding the reading texts. He reported that all the pre-reading activities had an effect on activating learners' background knowledge; however, they differed in terms of the interaction between the activity and learners' proficiency levels.

In another study, Mihara (2011) compared the effectiveness of vocabulary pre-teaching and pre-questioning activities in three Japanese intermediate EFL classes. She also aimed to reveal whether there was a link between pre-reading activities and learners' perceptions within a survey design. Each group took the two-pre-reading activity respectively and reflected their views regarding the activities. The statistical results indicated that pre-questioning reading pre-activities were more efficient than vocabulary pre-teaching. While vocabulary pre-teaching was less effective as a pre-reading activity, learners preferred this pre-reading category according to the results of the questionnaire.

Taglieber et al. (1988) investigated the effects of pictorial context, vocabulary pre-teaching, and pre-questioning pre-reading activities on Brazilian EFL learners' reading comprehension within an experimental research design. For the measurement process they used open-ended and multiple-choice test. They found that all pre-reading activities had a positive effect on learners' reading comprehension as compared to control group; however, vocabulary pre-teaching activities were not as effective as the other two types of pre-reading activities. Alemi and Ebadi (2010) aimed to reveal the effect of different pre-reading activities on the reading performance of 40 EFL university students. They administered five reading comprehension sessions. Learners in treatment groups were given pictorial context, vocabulary pre-teaching and pre-questioning activities. However, learners in the control group were not exposed to any treatment. A post-test was used to measure reading comprehension between the groups,

and their study revealed that the learners in the treatment group outperformed the learners in the control group in reading performance.

In an Iranian EFL context with the participation of 40 pre-intermediate level learners, vocabulary pre-teaching was used as the pre-reading activity to investigate whether this treatment had an effect on learners' reading comprehension (Rasouli et al., 2019). Within the pre and post-test design, their study revealed that the treatment group who received 10 sessions of pre-reading activities obtained better results as compared to the control group. Based on one control and three experimental research design, Hashemi et al., (2016) implemented three different pre-reading activities (the brainstorming, the KWL, and the pre-questioning techniques) in the experimental groups with the participation of 125 EFL high school learners. They compared them to the control group in which no pre-reading activities were used. Their study showed that the KWL activity (what I know, want to know, learned) significantly improved learners' reading comprehension more than the other pre-reading activities. On the other hand, all the experimental groups obtained better results as compared to the control group.

## 2.2. *The effect of vocabulary knowledge on teaching reading comprehension*

Research has evidenced that vocabulary knowledge and reading comprehension are interrelated. The use of vocabulary activities in pre-reading activities positively affected learners in the preparation process for the post reading (Koda, 1989; Alessi and Dwyer, 2008; Djuarsa, 2017; Boyer, 2017; Al-Khasawneh, 2019). Koda (1989) used language proficiency and reading comprehension measures, speed word recognition, speed letter identification task and a questionnaire to investigate the effects of transferred vocabulary knowledge in the development of second language reading comprehension performance of 24 EFL Japanese college students. Her correlational study revealed that the vocabulary knowledge of learners in their L1 had an effect on the L2 reading proficiency. Additionally, this transferred knowledge facilitated the acquisition of linguistic knowledge and verbal processing. In a similar vein, Al-Khasawneh (2019) investigated the role of vocabulary size in reading comprehension of EFL Saudi learners attending to department of English Language at King Khalid University. Within a correlational research design using vocabulary size and reading comprehension tests, his study revealed a high correlation between the vocabulary knowledge and reading comprehension of learners.

Alessi and Dwyer (2008) investigated the effect of whether the inclusion of pre-reading vocabulary teaching and while-reading vocabulary teaching on reading comprehension ability of 76 EFL Spanish university students. Within randomly assigned groups and a crossed between subjects experimental design, their study revealed that vocabulary teaching as a pre-reading activity accelerated the speed of language learners' reading skills. Djuarsa (2017) investigated the effect of vocabulary size on reading comprehension of EFL high school learners at a private school in Surabaya context. Based on a correlational research design, a high correlation was found between vocabulary size of learners and their reading comprehension achievement. In a similar vein, to gauge effect of direct vocabulary teaching as in pre-reading activities, Boyer (2017) implemented an experimental research design to reveal whether direct vocabulary teaching has an effect on the third grade EFL learners within a quasi-experimental research design. According to the results of her study, learners who took explicit and direct vocabulary teaching outperformed in reading comprehension as compared to the learners who did not take the intervention.

The hypothesis of the present study is that implementing pre-reading activities in L1 will have a positive effect than pre-reading activities implemented in L2 on of EFL learners' reading comprehension and focus-on-vocabulary scores. Hence, this study attempts to explore the effect of pre-reading activities prepared in L1 on reading comprehension and learning of focus-on-vocabulary in the reading texts. We also investigated whether some categories of pre-reading activities are more effective in L1 and L2 pre-reading activities, we addressed the following research questions;

1. Is there a statistically significant difference in the reading comprehension scores of the groups after the intervention process?
2. Is there a statistically significant difference in the focus-on-vocabulary scores of treatment and control groups ?
3. What is the effect of pre-reading activities in learners' achievement test results?

## 3. Method

All responsibility belongs to the researchers. All parties were involved in the research of their own free will. Because the data for this study were collected from 60 tenth grade EFL students attending a high school in Turkey

in the 2019-2020 academic year and ethics committee approval was not required then as "TR DİZİN Journal Evaluation Criteria were updated for 2020".

This study was undertaken since previous literature evidenced that the use of different pre-reading activities in ESL and EFL contexts had positive effects on learners' reading comprehension and vocabulary learning. However, no previous study has investigated the effects of L1 use in categorically different pre-reading activities based on the 'short-circuit' hypothesis of Clarke (1988). This hypothesis holds the view that once a learner reaches a certain degree of proficiency in a foreign language, his first language reading abilities can only be transferred to that language respectively (Alderson & Banerjee, 2002). Hence, we hypothesize that learners' reading comprehension level, and vocabulary learning would be higher when categorically different pre-reading activities were implemented in the 'short-circuit' L1 use of EFL learners.

### 3.1. Participants

The participants in the current study were 60 tenth grade EFL learners attending a high school in Türkiye during the 2019-2020 teaching year. English is an obligatory course with four teaching-hours per week and the learners participated this study as a part of their regular scheduled English classes. One class was assigned as a treatment group (henceforward TG) and the other was used as a control group (henceforward CG) in a non-random fashion. The number of participants were equal (TG= 18 girls and 12 boys: CG=18 girls and 12 boys) in each group. The ages of the participants ranged from 14 to 16 and their proficiency level was the same since the enrolment process of high school students in public high schools is carried out via a national examination based on a predetermined set of achievement percentages. This examination is held at the end of each academic year, and it assesses secondary school learners' reading comprehension and vocabulary knowledge in English as well as other subjects. Therefore, the participants' English proficiency levels were considered to be equal based on the results of this examination.

### 3.2. Instruments and procedure

Even in nature a quasi-experimental research design, we administered an achievement test (AT) that was taken from national learning management system known as EBA in Turkey to determine the proficiency level of the groups in reading comprehension. The pre and post-test consisted of multiple-choice reading comprehension and multiple-choice focus-on-vocabulary questions. AT questions were distributed as 15 reading comprehension and 10 focus-on-vocabulary questions. Sample AT questions were illustrated in the given table (Table 2).

Table 2. Sample AT questions.

| Multiple-choice reading comprehension   | Multiple-choice focus-on-vocabulary question  |
|---|---|
| Everybody has a different plan for the future. Mine is being a teacher. Everybody wants to know why I want it. I know I won't earn a lot of money and become famous. But it is a very rewarding job. I will have the chance to teach my students to distinguish right from wrong. I will change them, and they will change the world. Do you understand why I want to be a teacher now? | Everybody has a different plan for the future. Mine is being a teacher. Everybody wants to know why I want it. I know I won't earn a lot of money and become famous. But it is a very rewarding job. I will have the chance to teach my students to distinguish right from wrong. I will change them, and they will change the world. Do you understand why I want to be a teacher now? |
| 6. The writer wants to - - - .  | 7. "rewarding" means - - - .  |
| A) be famous  | A) satisfying   |
| B) earn a lot of money  | B) boring   |
| C) shape the future   | C) tiring   |
| D) become a well-known person   | D) exhausting   |
| E) win a lot of prizes  | E) terrifying   |

This AT provided a baseline to enable the researchers to test their supposition that both groups shared a common language proficiency prior to the treatments.

With the recent developments and amendments in the curriculum design of EFL teaching in 2019, the Ministry of National Education put into action a program for teaching four skills with integrating them into topic themes. The implementation process of this study and the testing procedure were in line with this recent design for the 10<sup>th</sup> grades. The tenth grade EFL syllabus consists of 10 topic themes, including reading passages for enhancing learners' reading skills, which follow the order of pre-, while, and post-reading activities accordingly. The initial four topic themes from the main course book were selected for the implementation process of this study.

The total implementation process took 32 teaching hours over 8 weeks. Four reading texts that range in length from 200 to 300 words were read by EFL Turkish learners. Later on, they successively took reading comprehension questions and focus-on-vocabulary exercises in the post-reading activities. This process was ordered in the same way for both groups. Pre-reading activities were administered in L1 in the TG and L2 in the CG. The translation and organization of the pre-reading activities were also checked by two EFL teachers at the same school. Four different formats of pre-reading activities from Tudor's (1989) categorization were selected since these formats were also in line with our pre-reading activities in the initial four reading texts of the themes of the learners' EFL coursebooks). The content of the first and second reading texts were not culture-specific texts; however, the content of the third and fourth reading texts were taken from learner's own culture (Table 3).

Table 3. Categories of pre-reading activities and post reading activities

| Themes  | Reading texts        | Categories                | Formats                     |
|---------|----------------------|---------------------------|-----------------------------|
| Theme 1 | Education in England | Vocabulary priming        | Word list with definition   |
| Theme 2 | Time Management      | Purpose setting questions | Purpose questions           |
| Theme 3 | Seyit Ali            | Vocabulary priming        | Vocabulary-based prediction |
| Theme 4 | Ahi Evran            | Purpose setting questions | Comprehension questions     |

Following the each pre-, while and post-reading activity of each theme, an achievement test (AT) gauging learners' reading comprehension (15 questions) and the learning of focus-on-vocabulary (10 questions) was administered for measuring process. These 25 questions for each theme were also pilot tested with other 10<sup>th</sup> grade learners at the same school. The directions and questions were tested and revised after this piloting. All these ATs were administered during the class periods as a part of formal instruction of reading skill and the results were also used to calculate the learners' performance grades for the first semester. The results of pre, post and ATs were analyzed through the statistical software program SPSS 22.0.

### 3.3. Data analysis

We analysed the data through descriptive and inferential statistical analysis technique by using SPSS software. T-tests were conducted to see the effects of pre-reading activities in the between and within differences of the groups, and a multivariate analysis of variance (MANOVA) was used to examine the effects of variables (four different pre-reading activities in L1 and L2) on reading comprehension and vocabulary learning scores of learners.

## 4. Results

We firstly hypothesized that learners in TG would attain higher reading comprehension scores, secondly, TG would also attain higher focus-on-vocabulary learning scores than learners in CG, and lastly, both groups would attain higher reading comprehension and focus-on-vocabulary learning scores in their post-tests as compared to their pre-tests after the intervention process. Our measures for reading comprehension and focus-on-vocabulary scores were multiple-choice questions. Initially, we implemented a pre-test to see whether both groups had equal reading comprehension and focus-on-vocabulary levels.

Table 4. Pre-test results of TG and CG.

| Groups | The mean values of Pre-test |       |         |      | 95% Confidence Interval of the difference |       |                 |          |        |
|--------|-----------------------------|-------|---------|------|---|-------|-----------------|----------|--------|
|        | n                           | m     | SD      | Sig. | t   | df    | Sig. (2-tailed) | Lower    | Upper  |
| TG     | 30                          | 51.20 | 19.3237 | .453 | -.135                                     | 58    | .893            | -10.5507 | 9.2174 |
| CG     | 30                          | 51.86 | 18.9222 |      | -.135                                     | 57.97 | .893            | -10.5508 | 9.2175 |

An independent-sample t-test was conducted to compare the levels of the groups before the intervention process. Table 3 shows that there was not a significant difference between the scores of TG (M=51.20, SD=19.3237) and the CG (M=51.86, SD=18.9222);  $t(58) = -.135$ ;  $p > .893$  in the pre-tests. The magnitude of the differences in the means was very small ( $\eta^2 = 0.2$ ).

*1- Is there a statistically significant difference in the reading comprehension scores of treatment and control groups?*

A one-way multivariate analysis of variance (MANOVA) was used to investigate the effect of different pre-reading activities in learners' L1 and L2 on reading comprehension and focus-on-vocabulary learning. Four different formats of pre-reading activities were used as the dependent variables: *word list with definition (Theme 1)*,

purpose questions (Theme 2), vocabulary-based prediction (Theme 3), comprehension questions (Theme 4). The independent variables were the groups in which learners' L1 in TG and L2 in CG on reading comprehension and vocabulary learning were implemented.

Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted.

Table 5. Box's test of equality of covariance matrices<sup>a</sup>.

|         |           |
|---------|-----------|
| Box's M | 6,433     |
| F       | .595      |
| df1     | 10        |
| df2     | 16082.869 |
| Sig.    | .819      |

According to Box Test of Equality of Covariance Matrices (Table 5), our dependent variables did not violate the assumption of homogeneity of variance-co-variance matrices (Field, 2009; Tabachnick & Fidell, 2007). This enabled us to use MANOVA for our dependent variables in reading comprehension and focus-on-vocabulary.

The effects of the four different formatted pre-reading activities in L1 and L2 with reading comprehension and focus-on-vocabulary scores are illustrated separately in the following tables.

Table 6. MANOVA for reading comprehension scores in ATs.

| Source             | <i>V</i> | <i>F</i> | <i>H. df</i> | <i>E. df</i> | <i>Sig</i> | <i>PES</i> |
|--------------------|----------|----------|--------------|--------------|------------|------------|
| Multivariate Tests |          |          |              |              |            |            |
| Groups             | .318     | 29.496   | 4.00         | 55.00        | .00        | .682       |

According to the results of multivariate tests of MANOVA in Table 7, there was a statistically significant difference in reading comprehension scores of the groups,  $F(4,55) = 29.496$ ;  $p < .00$ ; Wilk's Lambda = .318; partial eta squared = .69.

Table 7. MANOVA for the effect of different pre-reading activities on reading comprehension ATs scores.

| Source                      | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | <i>Sig</i> | <i>PES</i> |
|-----------------------------|-----------|-----------|-----------|----------|------------|------------|
| Word list with definition   | 2968.067  | 1         | 2968.067  | 36.201   | .000       | .384       |
| Purpose questions           | 38.400    | 1         | 38.400    | .269     | .606       | .005       |
| Vocabulary-based prediction | 2666.667  | 1         | 2666.667  | 14.437   | .000       | .199       |
| Comprehension questions     | 10349.067 | 1         | 10349.067 | 83.491   | .000       | .590       |

When pre-reading activities were considered separately, the second format (purpose questions) in Time Management reading text did not show a statistically significant difference in the scores of the groups. An inspection of the mean scores in the descriptive statistics indicated that although TG had slightly higher scores in this format ( $M = 43,0667$ ,  $SD = 11,20016$ ) than CG ( $M = 41,4667$ ,  $SD = 12,67017$ ), the result did not reach a statistically significant difference  $F(29,4) = 29.496$ ,  $p > .606$ , partial eta squared = .68.

*2-Is there a statistically significant difference in the focus-on-vocabulary scores of treatment and control groups?*

Table 8. MANOVA for focus-on-vocabulary scores in ATs.

| Source             | <i>V</i> | <i>F</i> | <i>H. df</i> | <i>E. df</i> | <i>Sig</i> | <i>PES</i> |
|--------------------|----------|----------|--------------|--------------|------------|------------|
| Multivariate Tests |          |          |              |              |            |            |
| Groups             | .404     | 20.26    | 4.00         | 55.00        | .00        | .596       |

For the results of focus-on-vocabulary scores in ATs of the groups in Table 8, there was a statistically significant difference between the groups,  $F(4,55) = 20.26$ ;  $p < .000$ ; Wilk's Lambda = .404; partial eta squared = .60.

Table 9. MANOVA for the effect of different pre-reading activities on focus-on-vocabulary ATs scores.

| Source                      | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | <i>Sig</i> | <i>PES</i> |
|-----------------------------|-----------|-----------|-----------|----------|------------|------------|
| Word list with definition   | 1859.267  | 1         | 1859.267  | 47.129   | .00        | .448       |
| Purpose questions           | 112.067   | 1         | 112.067   | 1.217    | .274       | .021       |
| Vocabulary-based prediction | 448.267   | 1         | 448.267   | 7.164    | .01        | .11        |
| Comprehension questions     | 1126.667  | 1         | 1126.667  | 26.822   | .00        | .316       |

The second format (purpose questions) in focus-on-vocabulary activities for Time Management text did not show a statistically significant difference in the scores of the groups. An inspection of the mean scores in the descriptive statistics indicated that although TG had slightly higher scores in this format ( $M=26,40$ ,  $SD=10,84563$ ) than CG ( $M=23,6667$ ,  $SD=8,15511$ ), the result did not reach a statistically significant difference  $F(20.4) = 41.98$ ,  $p > .274$ , partial eta squared = .60.

### 3- What is the effect of pre-reading activities in learners' achievement test results?

We accepted our last hypothesis that learners in both groups attained higher scores after the intervention process.

Table 10. Paired samples test of TG and CG.

|    |          | The mean values of pre-test |       |        |      | 95% Confidence Interval of the Difference |    |                 |         |         |
|----|----------|-----------------------------|-------|--------|------|---|----|-----------------|---------|---------|
|    |          | n                           | m     | SD     | Sig. | t   | df | Sig. (2-tailed) | Lower   | Upper   |
| TG | Pre_Post | 30                          | 34.66 | 15.899 | .00  | -11.943                                   | 29 | .00             | -40.603 | -28.729 |
| CG | Pre_Post | 30                          | 6.80  | 16.219 | .005 | -2.296                                    | 29 | .029            | -12.856 | -.734   |

The results of paired-samples t-test indicated that there was a statistically significant difference in the scores of the groups in their reading comprehension and focus-on-vocabulary scores. The scores of TG after the intervention process was ( $M=34.6$ ,  $SD=15,899$ ),  $t(29)=11.9$ ,  $p<.00$ . and the eta squared statistic (1.0) indicated a large effect size. On the other hand, the scores of CG were ( $M=6.8$ ,  $SD=16.219$ ),  $t(29)=2.296$ ,  $p<.005$ . The eta squared statistic (.30) also showed a large effect size.

## 5. Discussion

This study aimed to investigate the effect of L1 use in four different pre-reading activities on EFL learners' reading comprehension and learning focus-on-vocabulary scores. Additionally, we aimed to investigate whether these pre-reading activities would affect learners' achievement scores. Our results suggest that in order to answer the first research question, we found that L1 use in pre-reading activities affected positively as compared to L2 use in pre-reading activities. When the second research question was considered, we found that learners who took pre-reading questions in their L1 obtained higher scores in the focus-on-vocabulary questions than the learners who took pre-reading questions in their L2. Finally, in relation to our last research question, different pre-reading activities implemented in both groups had positive effects in reading comprehension and focus-on-vocabulary scores at the end of the intervention process.

We interpret these findings as indicators that pre-reading activities are significant contributors in reinforcing and improving EFL learners' reading skills and vocabulary learning simultaneously.

*1-Is there a statistically significant difference in the reading comprehension scores of the groups after the intervention process?*

Initially, to answer our first question, we explored whether the use of learners' L1 would affect their reading comprehension scores as compared to those of L2. This suggests that the use of L1 in pre-reading activities is more effective than in L2 in activating learners' background schemata in reading comprehension skills. This finding was consistent with that of Zhang' (2008) study who argued that L1 use in reading comprehension strategies would develop L2 reading skills both cognitively and conceptually. Due to the internal and external factors such as the preparation process of secondary school students for the high school entrance examination, EFL teachers commonly pursue Grammar Translation Methodology. This situation might also serve as a moderator factor in triggering and transferring of their previous L1 reading strategies into their L2 reading comprehension (Hock & Hashim, 2006). However, in purpose questions of the reading text in the second theme, the results did not show a significant difference between the groups. It might be argued that preparing learners for reading text that contain the schema of a general topic allowed learners to comprehend the text more easily not only in their L1 but also in L2 (Golombek & Stott, 2004).

*2- Is there a statistically significant difference in the scores of focus-on-vocabulary questions of TG and CG ?*

Our second research question focused on whether there were differences in the scores of focus-on-vocabulary questions of the groups. From the key findings of focus-on-vocabulary questions, L1 use in pre-reading activities had a positive effect on learning these words. Two of the pre-reading activities (word list with definition and vocabulary-based prediction) used in this study were based on teaching vocabulary for reading comprehension and focus-on-vocabulary skills of learners. Hence, teaching key vocabulary; especially prior to actual reading comprehension activities is regarded as strong predictors of and facilitators for successful reading comprehension and learning key vocabulary respectively (Alderson, 2005; Joshi, 2005; Manyak & Bauer, 2009; Ricketts et al,

2007). In a similar study, Proctor et al. (2006) revealed that L1 (Spanish) vocabulary knowledge and use in L2 (English) reading activities resulted in fluency and fast reading for the learners. In Koda's study (1989), which also supports the findings of the current study, showed that L1 vocabulary knowledge increased language learners' reading comprehension significantly. However, as was in reading comprehension questions, in purpose questions of the reading text in the second theme, the results did not show a significant difference in focus-on-vocabulary questions between the groups.

### *3-What is the effect of pre-reading activities in learners' achievement test results?*

Our third question concerned that whether pre-reading activities in learner's L1 and L2 would influence positively both their reading comprehension and focus-on-vocabulary learning at the end of the intervention process. According to the results of paired-samples tests, learners' who took pre-reading activities in their L1 outperformed in both reading comprehension and focus-on-vocabulary questions; however, learners who took pre-reading activities in their L2 also obtained significant progress both in their reading comprehension and focus-on-vocabulary questions as compared to their initial success. Although Golombek and Stott (2004) argue that reading texts that are culture specific and familiar to learners do not ensure to be better understood by learners, we hypothesize that the effect of culture specific (Nunan, 1985; Koh, 1985) and familiar reading prompted them positively in achieving high scores after the intervention process.

## **6. Conclusion**

Studies on reading skill and vocabulary learning in EFL/ESL contexts proved that implementing various pre-reading activities does have a positive effect on ESL/EFL learners reading comprehension and vocabulary learning (Hudson, 1982; Tudor, 1990; Mihara, 2011; Taglieber et al., 1988; Alemi & Ebadi, 2010; Bilokcuoğlu, 2011; Rasouli et al., 2019; Sousa, 2012; Hashemi et al., 2016; Koda, 1989; Alessi & Dwyer, 2008; Djuarsa, 2017; Al-Khasawneh, 2019; Boyer, 2017) by activating their background knowledge (Carrel & Eisterhold, 1983; Carrel, 1987; Taglieber et al., 1988). Considering this research paradigm, this study compared the effect of L1 and L2 use in four different formatted pre-reading activities. The results showed that the '*short-circuit*' L1 use in pre-reading activities was clearly more effective in improving reading comprehension and focus-on-vocabulary scores than L2 use in these activities.

Although this study provided insights about L1 use in different pre-reading formats and its effect on learners' reading comprehension and focus-on-vocabulary learning, it has limitations. First, as previously mentioned the EFL learners getting prepared for high school entrance examination have experienced the use of L1 in their classes. Future investigations of pre-reading activities might be designed to address this limitation in EFL contexts. Second, each learner has a different motivation and intelligence type which might influence their preferred reading comprehension and vocabulary learning strategy. Hence, as a limitation of this study, the participants were assumed as having the same motivational instincts and intelligence type. As previously mentioned, the integration of four skills into topic themes and teaching grammar within a GTM perspective, pre-reading activities are commonly neglected due to the restricted time and scope within Turkish EFL contexts.

### *6.1. Implications*

We are of the opinion that this study may shed light for EFL pre- and in-service teachers for arousing concern and interest in using various pre-reading activities to assist their learners in reading skill. Therefore, future research might include the use of GTM as a variable in EFL contexts. Lastly, while the reading texts used in this study were typical and limited to the selection from the textbooks designed for 10<sup>th</sup> grades. Keeping the intervention process for the whole teaching year with different oriented reading texts and implementing a delayed post-test to investigate whether the use L1 in pre-reading activities will have an effect on both EFL learners' reading comprehension and focus-on-vocabulary scores in their genuine examinations at their schools.

The results of this study suggest that conducting pre-reading activities in L1 might be an advantageous and alternative strategy for EFL teachers to enhance their students' reading comprehension. This case also might be a useful technique especially for open-ended questions which EFL teachers hesitate to use in their examinations since they are both time-consuming and difficult to evaluate in a limited time (Omari, 2018). Additionally, the '*short-circuit*' L1 use in pre-reading activities may reduce the anxiety of EFL learners who have difficulty in dealing with reading comprehension questions (Wu 2011; Petrus et al., 2020; Chen et al., 2022). Hence, the findings of this study can be helpful within an optimal way for curriculum designers in EFL contexts.

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#### ***Author contribution statements***

The authors contributed equally to the research design and implementation, analysis, and the manuscript's writing.

#### ***Disclosure statement***

The authors reported no potential competing interest.

#### ***Ethics committee approval***

All responsibility belongs to the researchers. All parties were involved in the research of their own free will. Because the data for this study were collected from 60 tenth grade EFL students attending a high school in Turkey in the 2019-2020 academic year and ethics committee approval was not required then as "TR DİZİN Journal Evaluation Criteria were updated for 2020".

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**Research article/Araştırma makalesi**

Investigating the fishery of Owabi fishing community in Ghana, West Africa  
using traditional ecological knowledge

*Samuel AMPONSAH*

## Investigating the fishery of Owabi fishing community in Ghana, West Africa, using traditional ecological knowledge

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### Abstract

This study aimed at identifying issues confronting fishermen within the Owabi Reservoir, Ghana, West Africa using LEK. Data from twenty (20) fishermen were collected on fishing methods, fish species, and alternative livelihood using open and closed-ended questionnaires. From the study, fishers indicated that eight species are mostly harvested from the dam, with most fish species declining in abundance. The status of fish species in the reservoir is affected negatively by climate change and waste disposal. As a result, most fisherfolks are engaged in alternative livelihoods to supplement returns from fishing activities. Fisherfolks engage in illegal fishing methods, though materials for illegal fishing methods are rarely available on the open market. To sustain the fisheries of the Reservoir, management should engage fisherfolks in community awareness programs on the impact of illegal fishing activities, as it will sustain the fisheries of the Reservoir.

## 1. Introduction

Fisheries resources have existed on earth for centuries and their management approaches have depended on the knowledge available to those entrusted with management responsibilities, including Indigenous Knowledge (Barnhardt and Kawagley, 2005). Local Ecological Knowledge mostly transcends generations through cultural transmission and can often be associated with elders within the local community (Olsson and Folke, 2001; Davis and Ruddle, 2010; Murray et al., 2006). Based on LEK, fisherfolk can provide novel information on the biology and ecology of species and aid in providing questions related to the identification of fish habitat use, nursery areas, and migrations of species where such knowledge is scarce (Le Fur et al., 2011; Begossi et al., 2016). Despite the important contribution of LEK to the management of natural resources, fisherfolk's knowledge is rarely incorporated into management policies for marine or freshwater fisheries environments (Silvano and Begossi 2010; Leite and Gasalla 2013; Allison and Badjeck 2004). This is partly because agencies and academics lack appreciation for the importance of such ethno-ichthyological data (Castillo et al., 2018). Though LEK has the propensity to complement formal science for sustainable management of fisheries resources (Dulvy and Polunin, 2004; Haggan et al., 2007, Johannes and Neis, 2007; Johannes et al. 2000), LEK is seen as dynamic. Hence, it is imperative to formally document such information for future reference about managing the fisheries resources. In Ghana, most fishermen are endowed with intensive indigenous knowledge about their fishing activities, including but not limited to when to set sail, declining fish species, how to identify fishing grounds, which waves or currents provide signals for a bumper catch, and others (Seidu et al., 2023). Studies on local ecological knowledge of inland water bodies are mostly scarce in Ghana, as recent studies are largely inclined toward the marine environment (e.g. Seidu et al., 2023). Given the paucity of information on LEK for freshwater bodies in Ghana and its importance to fisheries management, the present paper aims to assess the status of fisheries in Owabi Reservoir, Ghana, from the perspective of the fisherfolk's LEK. The information gained from this study will provide relevant authorities with the needed resources for sustainable management of the Owabi Reservoir fish species.

\*All responsibility belongs to the researchers. All parties were involved in the research of their own free will. Ethics committee approval was not required because the data for this study are not related to humans.

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## 2. Literature review

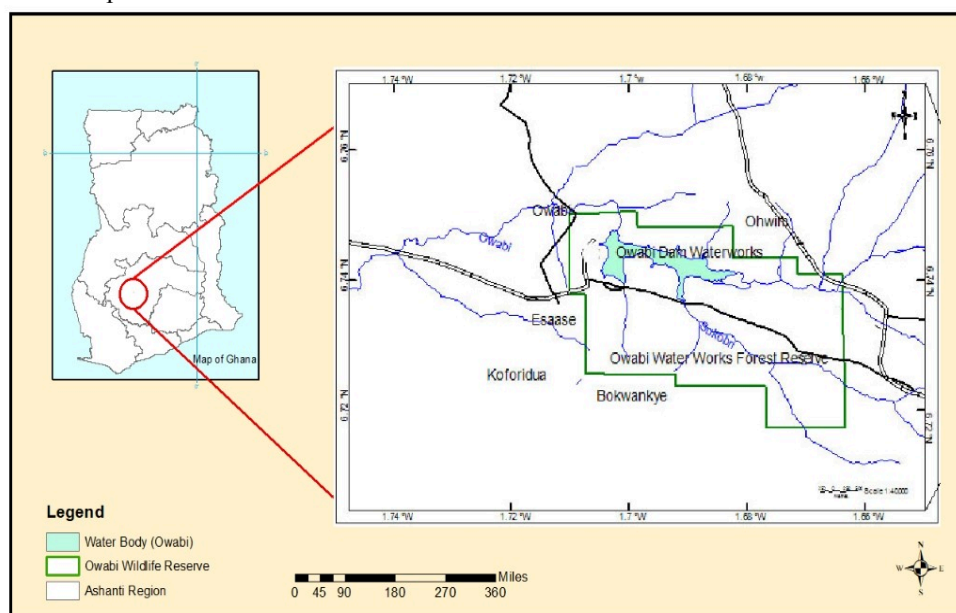
In the past, people relied heavily on indigenous knowledge to regulate their livelihoods, enabling them to be in harmony with their environment. As natural resources become increasingly managed globally, and these management systems constrain the way fishermen interact with the marine environment, understanding their impact on local ecological knowledge (LEK) is essential for management (Feldstein and Poats, 1989). LEK contributes to place-based, fine-scale spatial and temporal information, management techniques, and institutions (Tawake et al. 2001; Johannes and Hickey 2004; Drew 2005; Cinner and Aswani 2007; Vierros et al. 2010). Such information, if interpreted using a biological sciences framework, may provide better insights for biologists (Johannes 1993). However, the poor level of understanding of biological folk knowledge is problematic, as such information faces extinction due to the disappearance of indigenous people and their customs (Johannes 1978; Posey 1983; Wester and Yongvanit 1995). The absence of such information may lead to poor experimental design and incorrect conclusions by agencies responsible for fisheries management ((Johannes et al. 2000). As a result, many fisheries appear to be failing to achieve yields or conservation goals, and improving livelihoods is prioritized (Karr et al., 2017; Unsworth et al., 2018). Given this, it is clear that LEK improves decision-making (Bergmann et al., 2004; Berkes et al., 2001) and enhances conservation and management strategies for small-scale fisheries.

From indigenous studies by Seidu et al. (2023) on marine fishermen, it has been documented that fishermen use the lunar cycle to determine the appropriate period to embark on any fishing activities. Furthermore, many artisanal fishermen can detect shoals of fish using the paddle as a medium, while others know which currents bring more or less catch. Fishers are even aware of the feeding relationships associated with their target species' predators as they keenly observe the specialized feeding and breeding patterns of targeted fish species (Seidu et al., 2023). However, little information exists on local ecological knowledge for freshwater bodies in Ghana. In developing countries, where data and resources are often lacking due to certain challenges, there is a need to embrace LEK. This will aid in the attainment of useful information for the management of natural resources, whereas disregarding local knowledge will adversely affect their enforcement (Taylor et al., 2011; Silvano and Begossi, 2012; Thornton and Scheer, 2012; Anoliefo et al., 2003). It is, therefore, pertinent that these traditions be included in conservation and management strategies, as they have tacitly proven effective (Dudley et al., 2009).

## 3. Materials and methods

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Figure 1. The map of the Owabi reservoir with its tributaries



### 3.1. Study area

The catchment of the Owabi Lake is recognized as a wetland of national and international importance located in Atwima Nwabiagya Northern District in the Ashanti Region of Ghana (Banunle et al., 2021; Nunoo et al., 2012).

It was established in 1926 in the Ashanti Region of Ghana, in the Kumasi Metropolis. It has a depth of 7.4 m along its spillway and 11.5 m across the embankment (Akoto and Abankwa, 2014). Akoto and Abankwa (2014) indicated that the lake covers an area of about 69 km<sup>2</sup> with an approximate volume of 26,000,000 m<sup>3</sup> and is surrounded by a forest reserve. It serves as a source of fish, water supply, recreation or tourism, a wetland habitat for animals, maintenance of water tables, floods, and erosion prevention. The Reservoir, besides its primary function of water supply, also serves as an inland capture fishery resort. The local communities near and around depend on it as fish sources for their livelihood. In all, less than thirty (30) small-scale fishermen use dugout canoes and wooden paddles for fishing activities on the main dam. The Reservoir has several surrounding rivers and streams that serve as the lake with water, including the Rivers Owabi, Sukobri, Akyeampomene, Pumpunase, and Atafua (Boadi, 2018). The Owabi River, the main tributary of the Reservoir, with its quality affected by agrochemicals and fertilizers used by farmers within the Reservoir's catchment, are source of pollution to the Reservoir (Boadi et al., 2018).

### 3.2. Data collection

Data was collected on 25<sup>th</sup> January, 2022 at the dam and downstream of the Owabi reservoir. Close and open-ended questionnaires were administered to 20 fisherfolks who fish at both sections of the Reservoir. The selection of respondents for the study was done using random and snowball sampling techniques. The questionnaire was section into three categories, namely i) demographics of respondents, ii) fishing practices, iii) illegal fishing methods, and iv) threats facing fisheries.

### 3.3. Data analysis

Statistical Package for the Social Sciences (SPSS 25.0) was used to analyze the data retrieved from the respondents. Descriptive analyses, including the frequencies and percentages, were estimated using the SPSS. One One-way analysis of variance (ANOVA) was applied to non-categorical variables at a confidence interval of  $p = 0.05$ . Charts were developed using Microsoft Excel Tool Pac.

## 4. Results

### 4.1. Fishing activities

From Figure 2, the most harvested species from the Owabi Reservoir reported by respondents were *Coptodon zillii*, *Parachanna obscura*, *Chrysichthys nigrodigitatus*, *Sarotherodon galilaeus*, *Heterotis niloticus*, *Hemichromis fasciatus*, and *Clarias gariepinus*. Among these, the dominant species were *C. zillii* and *P. obscura* (Figure 2). From Figure 3, the main fishing gears identified were set gillnet, traps and & line. The most employed fishing gear by fishermen at the Owabi Reservoir was set gillnet (46%).

Figure 2. Respondent's response on fish caught from the Owabi reservoir

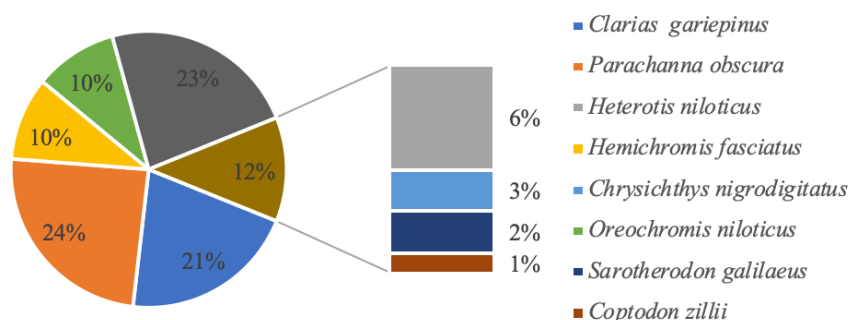


Figure 4 reports the different mesh sizes of fishing gear used by fishermen at the Owabi Reservoir. Respondents at the Owabi Reservoir reported eleven (11) different mesh sizes, with 2.5 and 3-inch mesh sizes being the most common. The most popular fishing locations are shown in Figure 5. The majority of fishermen acknowledged fishing in the lake's lower reaches (i.e. downstream), while a small number mentioned the dam portion as their favoured fishing grounds.

Figure 3. Fishing gears used by fishermen at Owabi reservoir

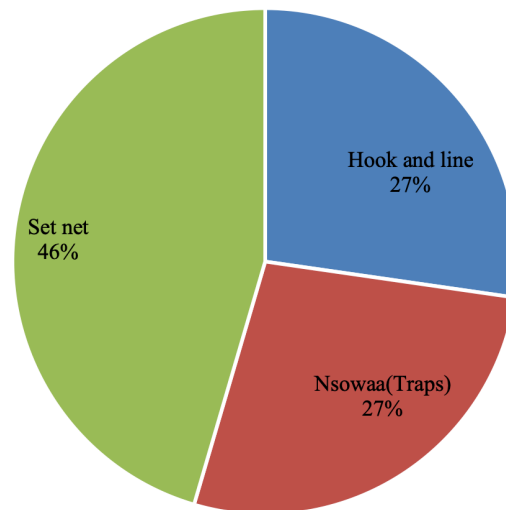


Figure 4. Mesh size of fishing gears used by fishermen at Owabi reservoir

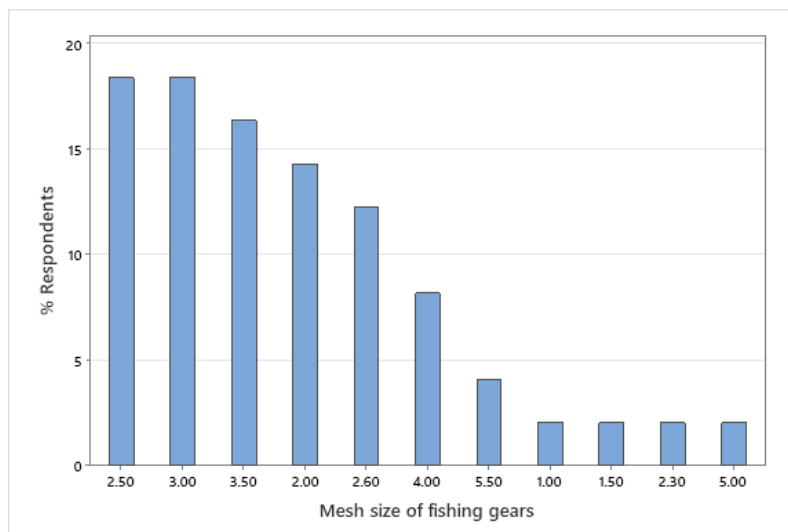


Figure 5. Preferred fishing area by fishermen at Owabi reservoir

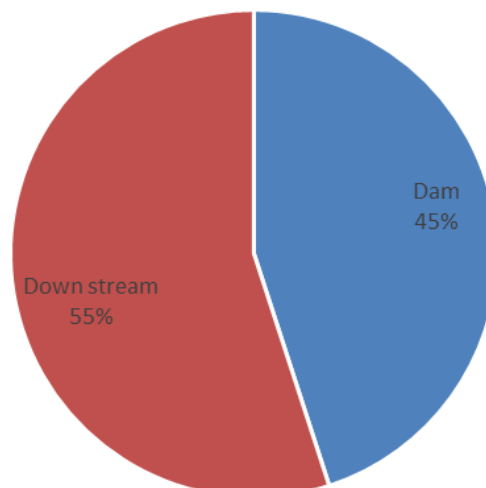


Table 1. Cross tabulation of fishing area and factors influencing the choice of fishing area

| Fishing area | Factors influencing choice of fishing area |                  |                 |           |             |                  |
|--------------|--|------------------|-----------------|-----------|-------------|------------------|
|              | Avoid the scent                            | Fear of security | Legitimate work | More fish | Open access | Security reasons |
| Dam          | 3  | 0                | 1               | 4         | 0           | 1                |
| Downstream   | 0  | 1                | 0               | 0         | 10          | 0                |
| Total        | 3  | 1                | 1               | 4         | 10          | 1                |

Table 1 lists factors influencing respondents' preferred fishing location. The avoidance of odour, the validity of the job, greater catch, and security considerations were cited by respondents who preferred fishing near the dam. Other respondents cited their concerns about security vulnerabilities and the downstream section's open access policy as their justifications for fishing in downstream section.

The frequency of fishing trips made by fishermen at the Owabi Reservoir is depicted in Figure 6. The majority of fishermen fish twice daily, with a small percentage (25%) fishing just once. At Owabi Reservoir, fishermen travel to the fishing grounds for an average of  $53 \pm 46.6$  minutes, ranging from 3 – 180 minutes. Fishermen spend averagely  $141 \pm 72$  minutes at the fishing grounds. They spend, on average, 57 minutes getting back to shore. Time spent getting to the fishing grounds, time at the fishing grounds, and time from the fishing grounds to the shore differed significantly [One-Way ANOVA,  $F(2, 20) = 16.47$ ,  $p$ -value = 0.001]. There was a significant difference between time spent at fishing grounds and time spent in getting to the fishing grounds, according to a post-hoc analysis employing the Tukey test. Respondents reported that in 2010, the average daily catches was  $2.5 \pm 1.15$  pans and in 2021, it was  $1.16 \pm 0.65$  pans., suggesting a decline in catches since 2010 (Table 2).

Figure 6. Fishing trip per day by fishermen at Owabi Reservoir

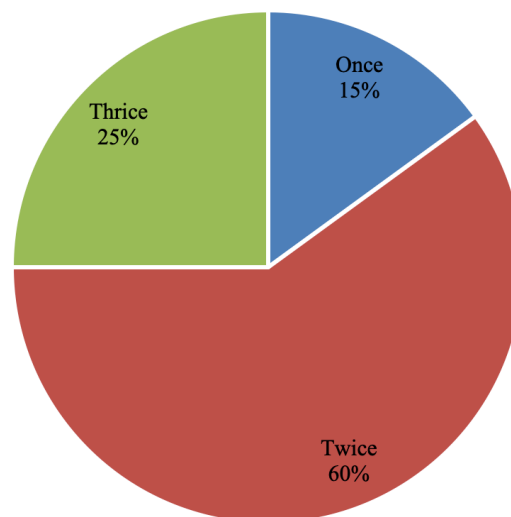


Table 2. Fishing characteristics at Owabi Reservoir

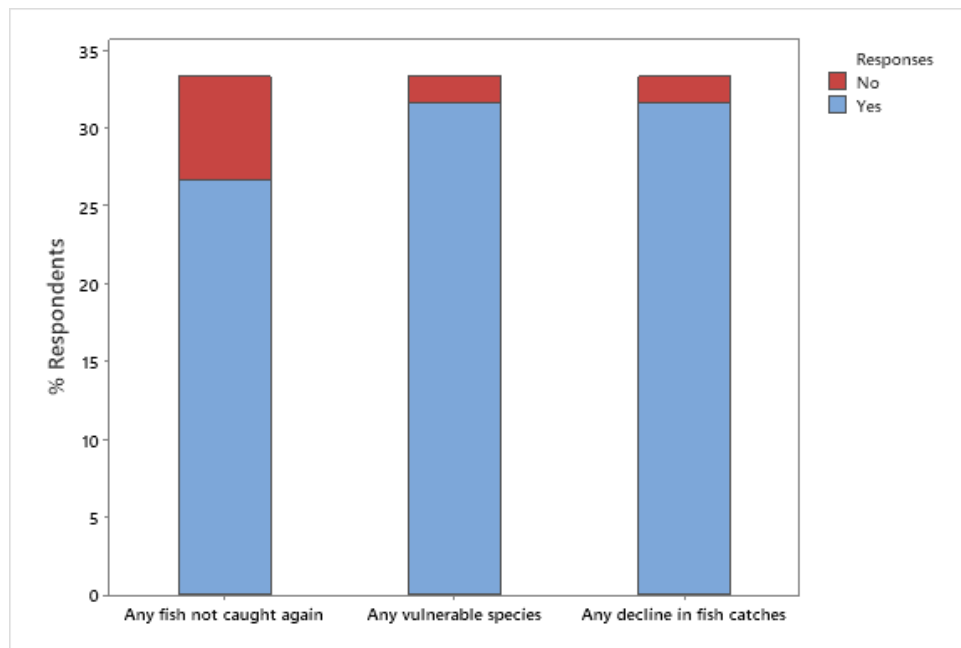
| Fishing characteristics                        | n  | Minimum | Maximum | Mean   | Std. Deviation |
|--|----|---------|---------|--------|----------------|
| Time spent to fishing grounds (mins)           | 20 | 3.00    | 180.00  | 53.15  | 46.60          |
| Time spent at fishing grounds (mins)           | 20 | 1.00    | 240.00  | 141.35 | 72.85          |
| Time from fishing grounds to shore (mins)      | 20 | 20.00   | 120.00  | 57.50  | 39.02          |
| Quantity of fish caught per day in 2021 (pans) | 19 | 0.50    | 3.00    | 1.16   | 0.65           |
| Quantity of fish caught per day in 2010 (pans) | 17 | 1.00    | 4.00    | 2.50   | 1.15           |

#### 4.2. Conservation statutes of fish species

According to the majority of respondents (Figure 7), specific fish species such as *H. niloticus* and *S. galilaeus* are no longer seen in the Reservoir. The majority of respondents substantially claimed that the population status of some species has collapsed [ $\chi^2(1, N = 20) = 7.20$ ,  $p = 0.007$ ]. Again, most of the respondents agreed that the population of some species including *C. zillii*, *H. fasciatus*, *C. obscura*, *H. niloticus*, and *C. gariepinus* are presently in a vulnerable state (Figure 7).

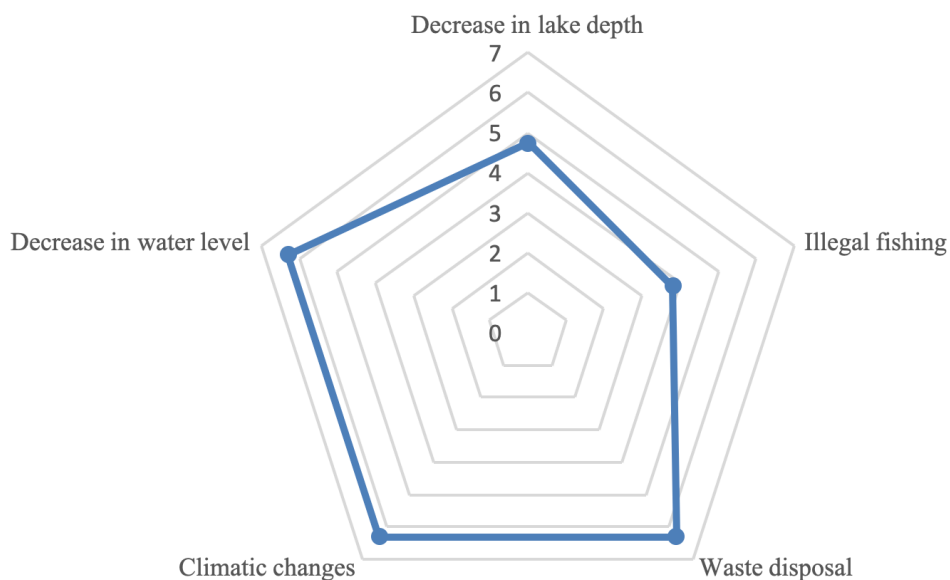


Figure 7. Responses on status of fish species at Owabi reservoir



The most frequent causes of fish species decline at Owabi Reservoir were the disposal of waste, shifts in the climate, and a decrease in water level. Illegal fishing practices and a decrease in lake level are of further concerns (Figure 8). Many of the respondents firmly agreed that trash disposal, climate change, a decrease in lake depth, and a drop in water level were the primary factors causing the decline in fish species. However, most of the respondents did not indicate that illegal fishing practices play a role in the decline of fish populations in the Owabi Reservoir.

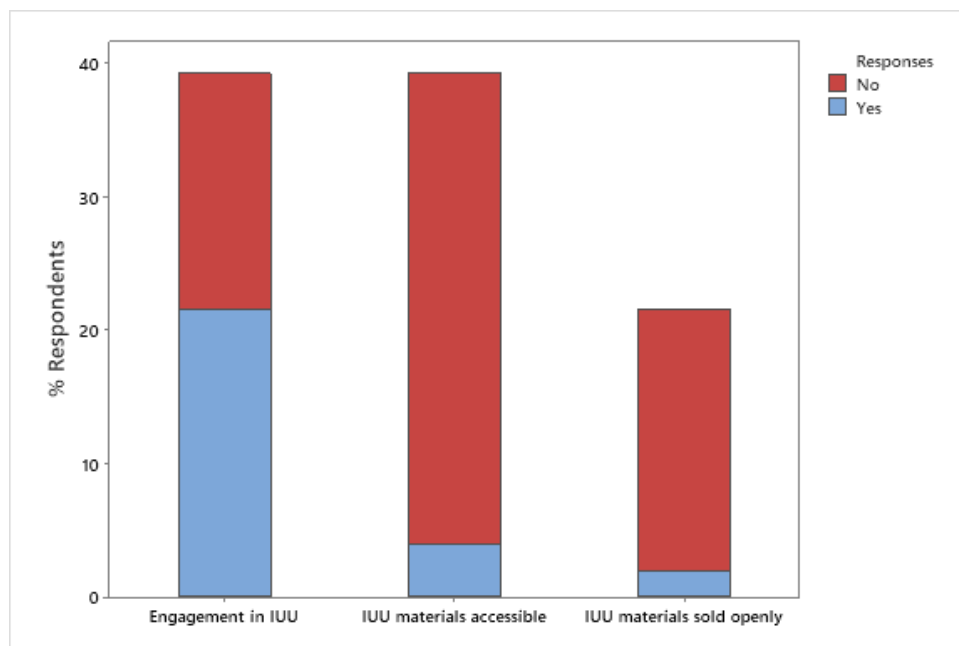
Figure 8. Factors affecting the decline in fish at Owabi reservoir



#### 4.3. Illegal unreported unregulated fishing methods

It is well known that most of the fishermen at Owabi Reservoir use IUU fishing techniques (Figure 9). Most of respondents substantially stated that it was difficult to obtain materials for IUU fishing activities (Figure 9). Again, many fishermen claimed that materials for carrying out IUU fishing activities are barely sold openly at the market (Figure 9).

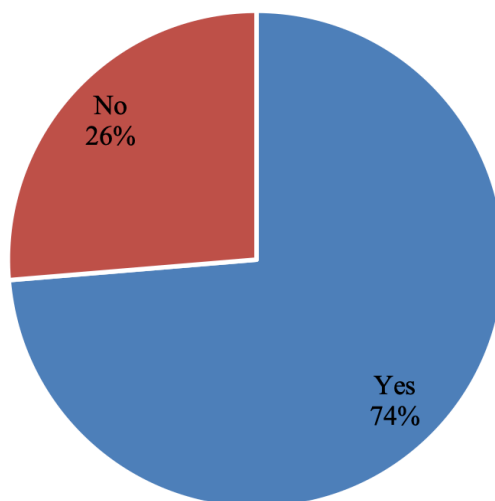
Figure 9. Issues on illegal unregulated unreported (IUU) fishing activities at Owabi reservoir



#### 4.4. Alternative livelihoods

Figure 10 shows that most respondents indicated their participation in other kinds of employment, while only a small percentage (26%) said they did not. The alternative livelihoods that the respondents pursued included plumbing, farming, farming, and water treatment.

Figure 10. Engagement in alternative livelihoods by fishermen at Owabi reservoir



## 5. Discussion

The fish species that live in the Owabi Reservoir are recognized to resemble those in Lake Volta (Nunoo *et al.*, 2012). Nunoo *et al.* (2012) reported nineteen species from the Owabi Reservoir which was comparatively more than the number of species reported by respondents from the current study. Variations in the depth and extent of the catchment area, differences in fishing gears, or physiological differences among the species could have accounted for the fluctuation in species composition. The study by El-Far *et al.* (2020) claimed that the sort of fish species that fishermen harvest depend on the selectivity of the fishing gears, hence understanding gear selectivity is crucial for fisheries management. Fish migration to the downstream in reaction to low water levels reduces the

catch composition in the reservoir. The mesh sizes used by fisherman in the reservoir from the study were consistent with those reported by Nunoo *et al.* (2012). However, the majority of the mesh sizes employed by these fishermen were illegal according to Ghana's Fisheries Act 625. For instance, any mesh size less than 2.9 inches in a freshwater system is prohibited by Ghana's Fisheries Regulations LI 1968 (Fisheries Regulations, 2010). The types of fishing gears seen in the study region were consistent with research conducted by Akongyuure *et al.* (2015) on the Oti River. However, the absence of a dragnet may be measures instituted by the management of the Owabi Ghana Water Company. Preference for a particular fishing ground depends on various circumstances, including better catches, increased protection against theft of fishing gear, and others. From the study, increased catch and profitability were the main drivers for fishing in the reservoir. This finding aligned with studies by Sultan (2020) and Hallwass (2016), who reported that financial gains mostly influence fishers' preferred fishing areas. Expected fish capture explains the choice of fishing place, according to Hunt *et al.* (2019).

The low presence of fishermen in the reservoir, however, could be due to their inability to provide the necessary documents needed by the Owabi Ghana Company to grant access to the resources. This management action may have played a key role in limiting fishing access and consequently ensuring sustainable management of the stocks. The huge amount of time spent by fishermen in getting to or from the fishing grounds may be due to the use of non-motorized dugout canoes, which largely utilize paddles for locomotion. Similarly, the huge amount of time expended in setting or hauling in the net may be due to the low number of crew onboard. Mostly these canoes accommodate only one fisherman and, at most, two fishermen. The setting aside a day's rest from fishing activities resonates with fishermen along the coast of Ghana. This non-fishing day is mostly for reducing fishing efforts on these fish stocks. During this non-fishing day, most fishermen repair their worn-out fishing gear and attend family gatherings and other activities (Akongyuure *et al.*, 2017). The contribution of drop in water level and change in climatic conditions lends credence to the impact of climate change on fish abundance (Pabi *et al.*, 2015). Furthermore, the high presence of waste within the reservoir may not have only reduce the abundance of catch but also affect the health of dependent households (Ameyaw, 2017). The presence of illegal fishing activities among fishermen in Owabi Reservoir is widely practiced in Ghana (Nahuelhual *et al.*, 2020; Nunoo *et al.*, 2015; Okrah and Agyeman, 2012). However, the existence of stringent management measures and the unavailability of materials for illegal fishing activities could have led to the low involvement of fishermen in such unsustainable fishing practices. Engaging fisherfolks in alternative livelihoods, such as masonry, plumbing, and petty trades, could be an economic solution to the low returns from fishing activities, especially in the wake of declining fish populations. Recently, many fishing households, especially women are engaged in supplementary livelihoods to enhance their economic well-being (Francisco *et al.*, 2021; Funge Smith, 2019).

## 6. Conclusion

The aim of the study was to evaluate the status of fisheries in the Owabi Reservoir from the perspective of local ecological knowledge. From the study, fishermen indicated the absence and presence of some vulnerable fish species. In addition, fishermen demonstrated knowledge on factors accounting for the decline in fish species. Furthermore, most fisherfolks were engaged in alternative livelihoods due to declining fish catch. From the study, is it essential that management of the reservoir conduct an awareness program on the impact of illegal fishing activities. In addition, climate change mitigation strategies should be developed by management to ensure sustainable fishing practice.

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### **Disclosure statement**

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**Research article/Arařtırma makalesi**

Digital public relations in the context of knowledge gap theory

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## Digital public relations in the context of knowledge gap theory

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Digitalization,  
Social transformation

Globalization, technology-driven economic changes, and digital transformation hastened by the pandemic of the previous four years have shown the relevance of digital and conventional public relations. Due to the rapid development of technology and digitalization, which transforms society, this study examines how public relations experts can use digital technology to reduce the information gap in transferring public relations practices and methods. Descriptive analysis, one of the qualitative research methods, was used after a literature review on the information gap hypothesis of digital public relations. In-depth interviews were conducted and public relations experts answered the subject-specific research questions. Public relations, unlike conventional media tools, lowers the information gap owing to digitalization knowledge and abilities, according to studies.

## 1. Introduction

Communication is the basic structure of public relations. Communication is an indispensable element. With digital public relations tools, institutions can communicate with their relevant target audiences anytime. It can directly share its messages with its target audiences without a gatekeeper. Public relations activities carried out in the digital environment have provided significant facilities to those working in the field of public relations in conducting research, collecting and storing information about customers, media, competitors, and the sector they are in as soon as possible. In other words, it is possible to say that digital transformation reduces the psychological distance between the institution and its target audience (Karsak et al. 2018:8). Accordingly, it is very important to analyze and follow the approaches of the target audience, which are actively involved in digital platforms. Instant content is shared on social media and many platforms based on the internet infrastructure. Content and messages are shared by platform users around the world very quickly through social media, and it is almost impossible to keep up with and follow this speed of the target audience with traditional methods (Çataldaş & Özgen, 2021:5228).

The knowledge gap theory assumes that the mass media do not inform all segments of society equally. Among the most important reasons for this are education and the economy. The low level of education of certain segments of society may leave them in the background of well-educated individuals. Well-educated individuals, especially regarding information access, are more curious and conduct research. The economic situation generally contains this logic. If the economic status of individuals is high, it can be easier to access information. For example, With the development of technology, incredibly technological devices are coming to the market, and they are in great demand by society. Devices such as computers, phones, and tablets increasingly diversify daily. Those who cannot reach these devices cannot keep up with the rapid progress of the internet world and fall behind. This is an undeniable fact. The knowledge gap theory also emphasizes that the mass media are insufficient to inform society for

*\*All responsibility belongs to the researchers. All parties were involved in the research of their own free will. The ethical approval document of this study is based on the permission document dated 14.08.2023 from Huawei Turkey, desiBel Agency, and TÜRKONFED officials.*

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these and many other reasons. Especially in continuing the research on the print media, with the development of the Internet and technology, the knowledge gap is included in the new media, and research is carried out. According to the various results of the studies, it would not be an accurate definition to say that the Internet clearly reduces or increases the knowledge gap. It takes time to catch up with technological development's speed and be effectively involved. During this time, research on the knowledge gap can be affected. While everything is progressing rapidly, society is affected by this speed, and accordingly, the information in the studies is updated. More research should be done to reach the masses, and studies on the field should be increased.

The rapid progress of the Internet and the technological world necessitates the field of public relations to keep up with this speed. Digitalized public relations is going through a critical period, especially with the target audience starting to play an active role on digital platforms. In this critical process, public relations specialists need to apply traditional public relations practices and new practices correctly in the digital environment and shape their strategies and tactics according to this new process to ensure continuity and not lose the target audience, which is one of the most important factors. In particular, these strategies and tactics should be implemented without causing a lack of information in society, and the knowledge gap should be reduced. In this study, digital public relations are examined within the framework of knowledge gap theory. Does digital public relations create a knowledge gap? By focusing on the question, suggestions are made about what public relations experts should do to reduce the knowledge gap. The primary purpose of the study is to emphasize that the digitalization of public relations with the development of technology over time and the development of the sphere of influence depending on the social transformation should act by taking into account the knowledge gap perspective while planning its actions to ensure the continuity of the institutions.

## 2. Knowledge gap hypothesis

The knowledge gap hypothesis was first discussed in the article titled "The Flow of Mass Media and Differential Growth in Information" by Phillip Tichenor, George Donohue, and Clarice Olien from the University of Minnesota in 1970 (Bonfadelli, 2002:66-67). In Turkish sources, it is also called "knowledge difference" and "knowledge aperture" (Mutlu, 2012,48). The theory reveals that the mass media fail to inform all segments of society equally and increase the knowledge gap (Güz and Yanık, 2017:2). According to this hypothesis, with the increase of information through mass media, it has been concluded that the knowledge gap among society increases over time, according to the possibilities of accessing this information (Mutlu, 2012:48). There are gaps between the low and high socio-economic status groups in experiencing change. In transferring information to society through mass media, segments with high socio-economic status adopt this information faster than segments with low socio-economic status. Accordingly, there is a tendency to increase the gap between the two segments. Besides the mass media, various factors cause the knowledge gap to increase. These; include "communication skills, amount of information stored, social contact, selective exposure, reception and retention of information, nature of the mass media system." Factors such as the status of individuals, education, and environmental factors are essential in increasing the knowledge gap. The knowledge gap theory states that obtaining information about any subject in the media spreads faster among better-educated people than less-educated individuals over time. There should be a correlation between the less reflection of the information in the media and the knowledge gained on more reflected topics and education. As elements such as communication skills, existing knowledge, or social contact come into play and the heavy media flow continues, the gap increases (Tichenor et al., 1970: 159-163).

One of the criticisms of the knowledge gap hypothesis is based on the insight into the knowledge that causes this gap. According to this approach, it is asked whether giving importance to the knowledge gap is reasonable rather than explaining useful and relevant information to certain social segments. It may be insignificant for people to lack knowledge on matters that do not really concern them as long as they have knowledge of matters that concern them. In addition, the receptive tendency of this theory has also caused criticism. This theory, which is based on the concept of concise and objective knowledge as a standard, ignores the formation of personal meanings and knowledge of individuals. Everyone in society tends to seek and access the information they need in their own time. They are motivated by the desire to seek information that they deem important to them without considering the issues that researchers and others treat for them. In this case, the knowledge gap in the studies covers the researchers' constructs. A general answer to these criticisms is that it is still a problem that certain people with more limited resources cannot obtain enough information about issues such as the economy and health (Mutlu, 2012:48).

The knowledge gap is particularly important in the media. The problem of not being able to use the media equally in accessing information by all segments of society leads to the emergence of a point of view that the

media reduces or increases the knowledge gap. Depending on the purpose of our research, since the knowledge gap in the field of digital public relations is discussed, we first aim to examine the knowledge gap and the media issue and then examine the public relations process. In this respect, the knowledge gap is examined within the framework of traditional media and new media, based on the progress of the media depending on information and technological developments.

### 2.1. Knowledge gap and traditional media

There are studies on the knowledge gap from the past to the present. Depending on the research, it has been determined that the knowledge gap increases from time to time, and sometimes it is closed. The important factor is how much information is exposed and how evenly it is distributed. Interest and motivation are among the critical factors of the knowledge gap. If there is an interest in existing knowledge and this interest is equally distributed in society, the gap in knowledge can be closed. Socioeconomic status is an important factor in the formation of the knowledge gap. However, the interest rate in politics also occurs depending on factors such as age. In addition to the attitude that the media generally closes the gap, the situations that increase the gap should not be ignored. Motivation is an important variable in reducing the knowledge gap. Therefore, motivation alone is not enough. At the same time, it is very important that the information is always accessible. Television is a universal communication tool in general, and it is possible to play an important role in the equal distribution of information due to being a media (Severin & Tankard, 2021:349). Even though there are a few studies that show that television increases the knowledge gap, it is generally concluded that it reduces the knowledge gap. Accordingly, there are studies that show that radio also creates a knowledge gap (Güz & Yanık, 2017:2). One of the main purposes of traditional media is to inform society. For this purpose, the knowledge gap that will occur in society should be taken into account, steps should be taken to close this gap, and action should be taken to reduce the knowledge gap by taking into account the interests and motivations in society.

### 2.2. Knowledge gap and new media

Besides traditional media, technological evolution has begun a new process for humanity. This new era is known as social media or new media (Güngör, 2013:367). "Internet; It makes a place for itself in many fields such as e-mail, intranet, extranet, online databases, and networks. The diversity of these areas is used as a tool in the communication of institutions with their target audiences. It makes itself felt as a single tool in some communication strategies (Özgen, 2010:85). This process, which started to develop with the use of the Internet, started a new virtual environment and communication process. At the same time, it provided new social areas for society. The new media has some features different from the existing KIA. Some of them are as follows (Güngör, 2013: 369-371);

*Interactionism*; Although the existing KIAs are generally unilateral, this process can be realized reciprocally with the new media. In other words, it has a two-way process. *Instant feature*; Depending on a mutual functioning process, the sending of messages and feedback occur at the same time and ensure more effective and efficient communication. *Individuality and massiveness*; While the existing mass media send their messages to the masses, social media can be used massively, as well as a communication environment where individual use is provided. *It does not require professionalism*; While professionalism is very important in media such as newspapers and television, anyone who is literate can use the new media. *spacelessness*; Anyone can communicate with anyone from anywhere. Especially with the presence of portable phones such as 3G and 4.5G, it has become possible to communicate more quickly. *Time excess*; Like spacelessness, everyone can send their message to the other party at any time, and the other party can receive it at any time. Although there is no change in terms of the basic principles that make up communication in the internet environment, there is a differentiation in terms of methods, and old methods are adapted according to the communication environment according to Today's conditions (Peltekoğlu and Askeroğlu, 2019: 1047).

New media has caused the interaction and differentiation of cultures and the acceleration and generalization of globalization stages over time. As a matter of fact, new media has a meaning as a new era with its causes and effects. However, it describes the social, technological, and cultural change, which is also referred to as "techno-culture." The concept of "new"; represents the dissemination of social developments through technology and beliefs that can be expressed as modern. The concept, which first appeared in Western societies, can be expressed as an ideological movement with new communication fields. Although the concept is basically defined as "digital" or "electronic" media, it should be emphasized that it is interactive media. A person, Internet, blog, etc., when he uses it, also uses the new media (Özgen, 2010:93).



A common point to be drawn from the definitions of new media is that with the evolution of information, new media is a technologically advanced system dependent on the Internet to function by creating an environment for media content in many forms (Udeze and Oka, 2013:200). In some studies on the new media and knowledge gap, it is stated that the knowledge gaps in the new media generally arise from the ability to use the Internet and computer, but it is also concluded that the Internet expands the knowledge gap rather than reducing it. There are studies on whether the Internet, as a very important mass communication tool, causes a knowledge gap. In the first research, it has been determined that the Internet increases the knowledge gap depending on the age factor, especially those who do not know and cannot use technology well. In research in recent years, data has been found that the Internet reduces the knowledge gap (Güz and Yanık, 2017:2).

In general, there is a point of view that the media increase or decrease the knowledge gap. For this reason, there are criteria that the media should be aware of regarding the concept of the knowledge gap and consider when creating, presenting, or promoting content against society. In particular, the media, which has the power to set the agenda and change society's thoughts on the determined issues, needs to produce and distribute news content in a way that reaches every individual in society. Society should be able to access information without encountering a lack of information while researching the subject they are curious about. At the same time, the media should be objective and continue their work by considering ethical values. However, they should be aware of the knowledge gap. In addition, all institutions that aim or should aim for the social good should also focus on the knowledge gap with awareness. For institutions that take into account the expectations and demands of society, the aim is not only to make a profit or to act according to their interests but also to exhibit goodwill corporate behavior by ensuring the satisfaction of society. In this respect, they should inform, persuade, and motivate society in their work. Action should be taken to reduce the knowledge gap in society, and all disadvantages should be considered. Public relations plays a very important role in reducing the knowledge gap between the institution and its target audience. It not only ensures that the target audience is informed about the institution but also undertakes important duties in providing information to the institution about the target audience and providing mutual understanding by making suggestions about what can be done. In this respect, public relations should plan their actions and be aware of their responsibilities, such as providing motivation to reduce the knowledge gap.

Public relations has progressed at an incredible speed over the years depending on spatial and technological developments, and Today it is not only public relations in the traditional sense but also public relations in a digital sense. Public relations, which progresses rapidly and pursues it with every evolution of communication, is now transitioning to a new era. The rapid change and development of technology in Today's conditions and the fact that it continues to show has brought the necessity of living in the digital age process. Regardless of society, institution, or individual, it has become inevitable to act in a way that can keep up with this speed, not against this transformation. To adapt to this transformation that builds the future, not to be adversely affected by the system's sanctions, and to continue the process of existence in a healthy way, it accepts this process as public relations. It takes action with the awareness that it is necessary to achieve social good and that corporate behaviors should be handled correctly digitally. With digitalization and the transformation it brings, information is transferred to the digital environment, and progress is made to maintain the existence of public relations as a very effective process in gaining a new perspective.

### **3. Transformation from traditional public relations to digital public relations**

In the 20<sup>th</sup> century, rapid developments in the field of technology and the introduction of social media, one of the outputs of digitalization, have brought significant changes and innovations in a wide area, from corporate companies to daily life. This process is called digitalization. Digitalization in public relations includes public relations practices realized digitally through new information and communication technologies. Public relations operating in the digital environment have provided advantages and conveniences between institutions and their target audience. Digital public relations has gone beyond the traditional understanding, has essentially removed the borders regarding both convergence and interaction, and advantages have been provided regarding materiality (Sönmez, 2020: 187). Digital Public Relations includes publishing online newsletters, benefiting from the power of journalism, or presenting information via the Internet to inform users about the services in an organization or the updates covering these services (Gifford, 2010:63). To understand the Digital Public Relations process, we need to examine the digital process well.

Digitization is transferring existing information with a technological device, computer, smartphone, etc. It can be expressed as moving it to digital media in a way that can be read through technological tools, edited with these technological devices, and used in business. Digitization in organizations should be considered as the stages' data

source, management approach, and digitization process. Accordingly, when organizations transfer information to this environment in the digitalization process, it creates a new perspective in producing goods and services by including the stages in the digital environment. This becomes a systematic form; institutional memory is created, and access to this process becomes more accessible. Therefore, in this process, organizations should develop digitalization strategies and tactics with the current situation analysis, inform everyone in the management from top to bottom about the digitalization process, and improve the digital skills of their employees (Üzmez and Büyükbeşe, 2021:123).

Digitization is the process of digitizing information. It concerns registration systems and, more and more, interaction methods. Digitization, on the other hand, makes use of digitized data and stages To reach the buyers and the preferences of the buyers by addressing the elements such as social media accounts, e-mail, marketing areas, and mobile applications of the customer in the registration systems, the consumption and collection of data from the familiar sources of demographic characteristics, operational information, historical interactions, and traditional recording methods. It is about making insight systems that describe technology that aims to support and improve the buyer experience by analyzing and developing. In digitization, a digital work environment is created by digitizing a particular area or business environment. Creating a digital work environment also means working separately from the workforce. Therefore, mobile devices and digital tools that make them mobile or operate more digitally are used. Digitization also goes beyond business. It means continuously adopting digital technologies in all possible social and humanitarian activities (Yankın, 2019:13).

Digitization provides significant advantages to organizations and managers in interpreting and distributing the existing data and outputs to facilitate access to information by putting technology at the center. Digital transformation, on the other hand, is defined as the ability of organizations to capture advantages related to their activities, to distinguish the competitive advantages that may arise, and to use these opportunities in organizational activities through digital technologies. It is essential to increase productivity, bring processes to a more effective and faster state, and manage problems that may occur. The digital transformation stage carries out the work to be done and the methods to be examined through digital technologies (Üzmez and Büyükbeşe, 2021:124).

It would not be correct to explain digital transformation through only a few technologies. However, on the other hand, it should be noted that a new era has started with the impact of technologies such as "2.0, mobile, broadband internet, cloud computing, digital media, big data, artificial intelligence, augmented reality, internet of things and 3D printers ". Using digital technologies, first of all, analog records were processed in the digital field (automation), and all stages were transferred to digital media (e-service). "At this point, all corporate assets and stakeholder relations are redefined in the digital environment (digital transformation)" (Yankın, 2019:13).

With the digital transformation process, rapid developments are observed in many areas. It is essential to follow the innovations to keep up with the times and stay caught up. Public relations is a field that must adapt to this rapid development. In particular, the fact that communication is an indispensable element shows that the discipline of public relations should always be open to development and should determine strategies and tactics for this. Every communication development also concerns public relations and shapes public relations tools and methods. For this purpose, with the continuation of the traditional meaning of public relations over time, it has started to turn to digital. While the widespread use of digital communication enables the addition of digital methods to public relations strategies, it also allows the integration of existing processes into the digital environment (Peltekoğlu and Askeroğlu, 2019: 1048). Digital public relations, expressed as the realization of the Internet and digital communication tools on public relations applications, has become important in establishing communication with the target audience. Considering the spread rate, area, and level of influence of digital platforms, it emerges as an area that should be managed by public relations (Şirzad and Turancı, 2019:423). Public relations, which has evolved towards digitalization, has expanded beyond the traditional understanding, and its responsibilities have increased. In this regard, depending on the social interest and motivation, it should be aware of the knowledge gap in the digital transformation process and act to reduce it.

With the emergence and efficient use of digital public relations methods, it is impossible to say that traditional public relations practices have disappeared. On the contrary, using these two application areas is important. At the end of the last century, when the intense competition environment was quite effective, public relations became very important for institutions and required public relations strategies and tactics. In addition, digital public relations have become mandatory with the developments that exist with globalization, the products that will revolutionize the Internet and information technologies, and all the new developments that follow. This situation reveals that public relations experts should be considered and given more importance by institutions. The necessity of employing professionals in this field is an indisputable fact. Although professional computer technology is not

generally required in digital public relations, good use of the website and social areas is among the basic skills. Depending on this situation, when the employee profile in the sector is examined, features for a specific field, such as SEO knowledge and Photoshop knowledge, are requested in the advertisements announced to the candidates who will do social media-related jobs. A much more general profile is drawn when we look at those who work in traditional public relations. Therefore, digital public relations have created a unique employee profile compared to formal public relations (Mert, 2018:726).

#### 4. Methodology

*Ethics committee approval*, all responsibility belongs to the researchers. All parties were involved in the research of their own free will. The ethical approval document of this study is based on the permission document dated 14.08.2023 from Huawei Turkey, desiBel Agency, and TÜRKONFED officials.

##### 4.1. Purpose of the research

The research aims to examine the concept of digital public relations within the scope of the knowledge gap hypothesis by considering the reasons, positive aspects, and disadvantages, if any, of the transformation process from traditional public relations to digital public relations, depending on the development of information and communication technologies. In the study, what public relations experts do depending on the transformation in the rapidly advancing digital world, their solutions against problems, etc topics such as In this direction, the study was detailed by interviewing digital public relations experts. It was aimed to create an important resource for future studies and to raise awareness on the subject. An in-depth research was conducted on the problem of the study by focusing on questions such as: “Does digital public relations create a knowledge gap? Does Digital Public Relations cause social transformation? Can Traditional PR be effective in Digital PR?”

##### 4.2. Hypotheses and method of the research

Digital public relations experts determined the universe of this research. As a result of the literature review, one public relations expert in the field of Institution, Agency, and NGO was determined as the sample, adhering to the studies on digital public relations. In this study, descriptive analysis, one of the qualitative research types, was used. At the same time, in-depth interviews were conducted in the research section. The answers obtained through in-depth interviews were conveyed within the framework of descriptive analysis, adhering to the purpose of the research. The research questions were determined by the subject, and the answers of the public relations experts were received within the framework of the determined sample.

In this context, to determine what public relations experts do to transform the public relations discipline and reduce the knowledge gap in the digitalization process, questions were prepared per the research literature study. Over these questions, an in-depth interview was held with Huawei Turkey’s Senior Corporate Communications Manager, the desiBel Agency Senior Director, and the TÜRKONFED (Turkish Enterprise and Business Confederation) Deputy Director.

1. How would you define the knowledge gap concept regarding your position?
2. How has digitalization transformed public relations? How to do digital public relations in new media?
3. Do you think digital public relations have the power to create social transformation?
4. Does digital public relations create a knowledge gap?
5. What are the knowledge gap needs of the converted target audience?
6. What are your PR activities to reduce the knowledge gap?

This study aims to contribute to the definition of digital public relations based on social transformation within the framework of the knowledge gap hypothesis.

H1. Internet reduces the knowledge gap.

H2. Different from traditional media tools, it is assumed that it reduces the knowledge gap because it depends on some knowledge and skills in the digitalization process of public relations.

## 5. Findings

High-status segments of society have more information than lower segments. Education is a significant factor in this regard. As the level of education increases, the rate of understanding and use of the mass media by each individual in society increases. While public relations play a vital role in traditional media, it reduces the knowledge gap in the process of reaching and approving the target audience on behalf of institutions, agencies, and NGOs, with its rapid adaptation to the process of digitalization and keeping up with the globalizing world as digital public relations. The knowledge gap theory is a critical theory to consider. The public relations discipline must study by considering the knowledge gap. For this purpose, having sufficient knowledge about the knowledge gap will guide them to follow a more accurate and reliable way in public relations activities. The experts define the knowledge gap interviewed in-depth as follows;

Huawei Turkey – Senior Corporate Communications Manager; *“Our task is to disseminate the institution's message in certain areas to the stakeholders it addresses. It is possible to disseminate knowledge in different ways. The press is one of them, but social media is now more prominent with digitalization. From an institutional point of view, it aims to prevent the gap from increasing by further strengthening the knowledge gap problem by conducting studies to close the knowledge gap or to create accurate and reliable content for all stakeholders.”*

desiBel Agency – Senior Director; *“Today, accessing information is faster than before. However, there is a disinformation environment created by the fact that information can be accessed through too many channels. This situation causes different individuals or groups to have erroneous or incomplete information. In terms of communication, this process of having incomplete and erroneous information, especially on sectoral or social issues, can lead to difficult or long-lasting results.”*

TÜRKNONFED - Deputy Director; *“The civil society perspective is a perspective that comes into play in areas where the public and private sectors, generally called two main institutions, are insufficient. When we consider the knowledge gap theory to evaluate it in this context (digital transformation), the digital tools developed by the private sector are the processes completed by non-governmental organizations where the public, that is, the state, is insufficient.”*

In order not to cause an increase in the knowledge gap in the digital environment, public relations specialists should first examine and adapt to technological developments, monitor the involvement of the target audience in this process, and collect and analyze data accordingly. During the evaluation process, it should determine how the target audience handles digital public relations practices by asking some questions, completing the deficiencies, and maintaining the ethical belief in the traditional public relations process by providing accurate information to the internal and external target audience.

Digital public relations requires harmonizing and adapting traditional public relations practices to digital to keep up with a new era and keep up with its speed. In the online environment, where primarily one-way communication is dominant, a two-way communication system has been adopted over time, and the target audience has been included in the system, causing an important social transformation. The way digital transformation transforms public relations;

Huawei Turkey - Senior Corporate Communications Manager; *“Public relations should go the way we call convergence Today. It should not be considered separately as before. In the past, public relations and marketing departments in institutions were separate, and as digitalization began, a digital department was established at a different point in the organizational chart. This situation should not be considered separately. Communication should be considered a 360-degree holistic and gathered under a single department. After the message reaches that department, it will be much more efficient if it is separated according to the audience and disseminated through the right channels. In fact, the knowledge gap not only for the external target audience but also within the internal target audience will thus be reduced. This is a much more efficient and ideal way. When they are separate, it isn't easy to achieve harmony. While there are good aspects of digital transformation, such as being practical and reaching thousands of people with a click, on the other hand, since the depth of the content decreases, even the basic elements of the subject come to the user with incomplete information and a message this time in that speed and practicality. A balance has to be struck here.”*

desiBel Agency- Senior Director; *“This transformation occurs naturally with the transformation of media channels at some point. The influence of printed publications and televisions until the early 2000s decreased gradually, especially as the effectiveness of web news portals increased from 2008 onwards. In the next stage, shorter content has set its sights on web portals with very large content in both visual and written media. New media has*

actually turned into a dynamic definition of exactly this transformation. Public relations also has to keep up with this transformation. Public relations professionals, who connect their expertise to a single medium, will definitely feel lacking in the needs of the new era and will reflect this to the institutions they work for.”

TÜRKONFED - Deputy Director; *“The fastest spreading tool among the mass media is the Internet and the platforms used in the digital world. The fact that the Internet has reached 50 million users, has developed in a short period of 5 years, and cannot be controlled has started to bring risks. The biggest of these risks is the inability to confirm the accuracy of the information, especially the individuals over the age of 35 who have lagged behind the Internet transformation, unable to establish a healthy connection between the digital world and the real world. Digital public relations in new media should be planned and implemented in a way that proceeds independently of the real-life identities of digital citizenship and digital identity. Decisions should be taken in line with the Sustainable Development Goals and implemented sensitively to all goals.”*

The change created by information and communication technologies day by day creates new communication environments in public relations and communication practices in general. In the digital age, digitalized communication has led to significant transformations in every sense. The public relations process, among these areas, is also being digitized and transformed. With the developments in the Internet and digital communication technology, traditional public relations have largely been replaced by digital public relations. Along with digitalization, communication strategies, styles, and methods have also changed. Those who carry out public relations activities have increasingly grasped the importance of the online stakeholder mass in social media and social media channels; blogs, online video environments, forums, and social networks have actually become important tools for many people to have their voices heard as consumers. Thus, social media has started to take an important place in the public relations strategies of organizations because of the rapid spread of messages published on social media to large masses and the creation of an environment of discussion among these masses. In this context, digitalized public relations is also used in museums, downloadable applications, virtual reality technologies, corporate websites, artificial intelligence applications, systems, and fields such as sponsorship, crisis management, corporate reputation management, marketing, and politics. Public relations, which has such a wide scope of application, also has important duties in creating social transformation with the digitalization process.

Public relations professionals are interested in all changes that impact social life. It is not possible for a sector, line of business, or branch of science not to change because, in fact, people change fundamentally. Simply put, our consumption habits are changing, the channels we use in terms of communication are changing, and in this case, it is not possible for public relations not to change. The dominance of social media with digitalization is changing the channels. Therefore, the tools used by public relations have also changed. In this case, it has become a normal situation for society to change.

Huawei Turkey - Senior Corporate Communications Manager; *“It changes according to the country in social change and the country’s situation. For example, When we examine Slovenia as a country with a much smaller population, where there is a lot of digitalization in internet use and where many things can be easily applied, some things can be transformed and changed more easily with a public relations campaign about the environment. In such countries, transformation can be achieved with digital public relations campaigns on some social issues. By using digital tools to minimize plastic consumption, it is possible to transform society with films, short videos, and some encouraging campaigns. On the other hand, when we consider countries with much larger populations, it is not impossible to implement such campaigns. Still, it seems much more difficult to achieve short-term results regarding transformation.”*

desiBel Agency - Senior Director; *“Digital public relations is directly proportional to breathing the air of digital media. Recently in Turkey, In many areas such as elections, travel events, economic fluctuations, political changes, and anti-violent reactions, it can be seen how large an impact digital channels can create. From this point of view, it is not impossible for society to make a transformation from this digitalization process with the increasing communication opportunities. However, on the one hand, we need to understand Turkey’s digital demographic structure well. We have had to strike a balance when comparing metropolitan areas with smaller settlements with more limited opportunities. However, in a few years, digital information will become more widespread and one of the main tools of social transformation.”*

TÜRKONFED- Deputy Director; *“The most effective tool in forming the information society is the Internet. The rapid spread of the Internet has also created a new society (new concepts such as the digital world and digital citizenship). With this rapid spread, a new culture has begun to emerge. These cultures formed in the digital world are examined under three headings Digital Natives, Digital Immigrants, and Digital Hybrids. When these three concepts are examined, it is noticed how much the generation gap has shortened in the digital world.”*

It is constantly in pursuit of change to achieve successful works in the field of public relations, which develops and progresses rapidly over time. In this case, an important question is whether digital public relations create a knowledge gap.

Huawei Turkey - Senior Corporate Communications Manager; *“While digital public relations has the power and capacity to close the knowledge gap, there is also the possibility of creating new gaps. The person reaches the information but reaches the one according to his/her consumption habits, and thus, he/she is not aware of the developments on the other hand. In addition, in the last period, one has been exposed to so many messages in a day that this time the person may prefer to close himself to all messages. Since there is an intense flow of messages from morning to evening, the person willingly closes himself to information. This situation causes a knowledge gap because the individual who does not want to be exposed to the excessive message bombardment in Today's world refuses to receive the information they need.”*

desiBel Agency- Senior Director; *“Today, it is seen that digital possibilities and, accordingly, digital communication are quite ahead of conventional communication tools. In this respect, we cannot talk about a knowledge gap.”*

TÜRKONFED - Deputy Director; *“As in real life, due to the lack of equality of opportunity in the digital world, the knowledge gap is increasing in rural areas or in less developed regions. Civil society also intervenes here and tries to include the private sector and public institutions in this process by producing projects to ensure equality of opportunity in education and rights.”*

The expectations and needs of society diversify over time, and individuals who are more conscious expect more, depending on the speed of information and technological development. Digital public relations, on the other hand, needs to incorporate new tools to keep up with this speed. Through these new tools, it makes it possible to establish communication between the institution and its target audience, regardless of time and place. It is important to determine these needs with digital public relations and to prepare strategies on this basis.

Huawei Turkey - Senior Corporate Communications Manager; *“It is possible to fill the knowledge gap needs of the target audience by transferring the information knitted with more personalized details. Since the interests of the transformed target audience also change, the topics are different in the young generation, and communication professionals need to create content accordingly. With a corporate film, you can present the basic information of the institution you represent to your target audience with beautiful music and a Davidic voice. Still, now that there are thousands of such works, the converted target audience is looking for another detail. Details that no one would think of should be taken into account. For example, Is there a pad in your office? Can cats and dogs roam the office? Such details are considered important. In order not to create an ordinary perception in the minds, it is necessary to reveal an impressive element both in terms of message and visually.”*

desiBel Agency - Senior Director; *“Focusing on a single point, trying to obtain information from only one source is among the important elements that can create a knowledge gap in this transformation. It is important to prioritize diversity in every aspect of life. Reaching information from a wider window with a more inclusive perspective, not the opinions of a single opinion, a single channel, or a single opinion leader, makes it possible to reduce this gap. With the same perspective, communication experts should support this versatile information flow and enable the converted audience to reach richer content.”*

TÜRKONFED- Deputy Director; *“First of all, the lack of adequate internet infrastructure and equal opportunity in accessing information, the inability to understand the concepts of digital literacy and digital transformation, the inability of the public to train digital transformation personnel, the failure to establish and provide the infrastructure that can adapt to digital transformation of administrators and teachers in institutions affiliated to the Ministry of National Education. It is necessary to improve the factors such as the fact that the correct information cannot be confirmed and information pollution cannot be prevented.”*

The Internet has brought a different dimension to the knowledge gap in mass media. The fact that the gap between the knowledge gap and the research on traditional media is not closed clearly is important in terms of knowledge gap research with the emergence of the Internet. Although the Internet does not completely close the gap between the knowledge gap, it makes it possible for information to spread widely and reach most of society. Especially with digitalization and social media platforms, people access information among various options. This brings about a reduction in the gap. In Today's conditions, the incredible development of technology, the digitalization process of almost most things, everyone from a certain social segment to individuals in the whole universe can reach any place they want at any time and can access information not only within their own country and

abroad, but also on an international scale within seconds. In this case, institutions have a great responsibility. It is almost impossible for an institution not to consider keeping up with the new age to be sustainable. In this regard, institutions should implement effective PR activities to reduce the knowledge gap.

Huawei Turkey - Senior Corporate Communications Manager; *“The company's newsworthy and community-related content is regularly shared on its social media accounts and various digital channels.”*

desiBel Agency - Senior Director; *“Firstly, by diversifying the communication tools, communication projects are presented in different channels. A versatile communication strategy is implemented not only through conventional media but also through video channels, mini blogs, and social media channels. With different approaches such as physical activities, competitions, reference points, and opinion leaders that will attract the attention of society, special projects, social responsibility studies, and information, we are working on ensuring that our messages reach the target in the most accurate way.”*

TÜRKONFED - Deputy Director; *“It is very important for print, visual, and digital media to work in this area. As an institution, these projects are conveyed to the target audience by producing reports and projects that affect public policies. It is aimed to create social change with projects that spread to all segments of society. It is important to ensure social change through face-to-face, online, and digital platforms to develop ideas and realize projects that will ensure social integration by establishing public, private sector, and international collaborations.”*

### 5.1. Evaluation of the research

When we look at the research findings, it is seen that institutions give importance to the issue of the knowledge gap and take it seriously in their studies. Especially thanks to technological developments, the process of reaching, disseminating, and interpreting information whenever the target audience wants, regardless of time and place, has made it a priority for public relations experts to act more carefully and take action. According to the findings obtained, revealing a research result on what public relations strategies can be to reduce the knowledge gap is important both according to the purpose of the research and the findings obtained, as well as the importance of the knowledge gap for future studies and public relations practices and its importance in the field of digital public relations. It will be a model to highlight.

With the digital transformation, the Internet has become almost the most important tool for public relations. Institutions need social media managers to control and manage the content and information flow on the Internet. Online communication is less reliable than face-to-face communication. Accordingly, public relations professionals strive to make online communication reliable. Unless the message's source is known, the relationship to be established gives less trust. Online communication suits both parties if the user knows the message's source. It will be easier for the user to verify this information and accept the message if the source of trust is established strongly and the information supply is provided. At the same time, the presentation of the sent message is also a part of trust. How the information is presented to the user is equally important. Users; expect messages to be sent in a way that the messages themselves can understand. In ensuring trust, It is very important to carefully review the processes regarding who researched the message, with whom it was shared, with what methods it was used, what reliability stages it went through, and how users would believe in the accuracy of the messages. It is necessary to determine which message and which information is better understood. Public relations resources are used online Today. Public relations practitioners, on the other hand, should use the new media to manage the process faster and better at less cost. In this process, they should be especially concerned about the principle of confidentiality (Özgen, 2010).

Digitalizing public relations with new communication technologies has provided significant benefits to companies. One of the most important developments with digitalization is the disappearance of the distance between institutions and their target audience and the expansion of the boundaries of communication. Here, it is important for public relations specialists to use digital technology efficiently to represent institutions and to carry public relations practices to the digital environment, to reduce the knowledge gap between the institution and its target audience. When the digitalization process is looked at in the context of the target audience, it can be said that the development of digital technologies, it affects the consumption habits and actions of people. As the stakeholders adapt to this new technology in their daily lives, they do many transactions on digital platforms and therefore spend a lot of time in this environment. It is now necessary to communicate with internal and external target audiences on digital platforms in public relations practices. Due to the emergence of new communication tools

and methods, especially with the Internet, it became necessary for the target audience to be included in this environment, while public relations specialists had to develop their individual digital skills, while they had to follow communication technologies closely (Peltekoğlu, 2022:293).

The concept of the target audience in the traditional sense has not lost its meaning in the digital environment but has transformed. In general, the target audience is individuals who are interested in and can be affected by the products or outputs of the organization. With digitalization, the target audience has the power to change the outputs of the institution. Because on the digital platform, the individual can instantly express his thoughts, organize, or take a tougher attitude. In other words, the expectations of the target audience have increased, and they have realized their power. Therefore, public relations strategies should be compatible with digital environments, and appropriate strategies should be determined according to the digital target audience. To manage digital transformation correctly in the public relations process, there must be an important preparation process in the background of that world to dominate the digital world, to catch up with the functioning of that world, and to have public relations expertise that can manage the problems that may arise, that is, prevent digital crises. (Özgen, 2019:23-26). Public relations specialists should be prepared for the crises that may occur in the digital environment, as well as developing strategies and tactics for pre-crisis and post-crisis with proactive approaches in traditional public relations practices. Analyzing and planning by considering all factors, digital public relations strategies should be implemented to reduce the knowledge gap.

## **6. Conclusion**

Public relations have witnessed many different interpretations throughout history according to the management characteristics and social formations of societies. Public relations, which has become more and more important in the state sector and especially in the private sector as a result of the increasing competition conditions and changing society in recent years, is seen as the activities of regulating the relations of any organization with the masses opposite to the organizations, public groups, and employees, on the other hand, it is the control desires of the employees or the managed. It is a method that allows management to respond. Accordingly, in recent years, the Internet has developed faster than all other communication channels and has changed life and professions dynamically. Public relations practices are one of the professions that have been significantly affected by this online evolution. Public relations activities, which are called online public relations, digital public relations, and web-based public relations, basically using internet-based technologies, have become more common with the Internet.

With the development of information and communication technologies, concepts and applications in the field of communication are changing and progressing very rapidly, as in every field. This comprehensive and rapid transformation in the digitalizing world has led to the emergence of concepts such as artificial intelligence, virtual reality, industry 4.0, and society 5.0. This transformation in the digital world has also led to the emergence of new communication environments in public relations practices. The change created by information and communication technologies day by day has created new communication environments in public relations and communication practices in general. In the digital age, digitalized communication has led to significant transformations in every sense. The public relations process, among these areas, is also being digitized and transformed. With the developments in the Internet and digital communication technology, traditional public relations have been replaced by digital public relations. Along with digitalization, communication strategies, styles, and methods have also changed.

The knowledge gap is seen in the field of public relations, as in every field. Especially with the digitalization process, people's access to information can increase the knowledge gap. However, the Internet and information technologies are rapidly accepted and adopted by society. With the adaptation to this rapid transformation over time, it is obvious that there will be a significant decrease in the knowledge gap. The important point is distributing information equally to all segments of society. Here, not only the state but also institutions, agencies, and NGOs need to act quickly and carry out their work focused not only on certain segments of society but also on all segments. In this way, it is possible to reduce the knowledge gap in every aspect.

Digital transformation is an important issue for the discipline of public relations that needs to be studied persistently and in-depth. Each work should proceed by leaving a question for the next work, and an ideal digital transformation process should be produced in terms of both theory and practice. On the other hand, the unstoppable speed of technology and the increasing use of concepts such as Metaverse in our daily lives will reshape the concept of public relations in the near future. With the continued rise of virtual reality (VR) and augmented reality (AR), metaverses are entering the Internet. It is estimated that 85 million users will experience AR or VR at least once a month in the near future. Although Metaverse is not exactly what science fiction portrays, it will continue to produce unimaginable values in terms of public relations as a new computing platform. Considering all these,



the public relations discipline should adopt innovation and act without allowing the knowledge gap to occur. It should take into account the expectations of society by determining its strategy and tactics through these innovations and should continue its progress by being aware of social transformation.

As a result, the development of technology day by day expands the usage areas of digital tools. Although the tools used by communication disciplines are endless, they need to quickly add these digital tools to the tools they use. The most important issue of public relations is that they do not use these digital tools effectively to implement their strategies. While artificial intelligence contains a system smarter than all memories and renews itself rapidly, public relations must constantly renew itself and act within the framework of this innovation while implementing its strategies in such an unstoppable development system. With the rapid use of these digital tools in the field of public relations, they will reduce the knowledge gap. While the knowledge gap makes itself felt in every field, the public relations discipline should serve to reduce the knowledge gap by creating an accurate and reliable information source with its strategies and tactics. Ensuring equal opportunity is important for reducing the knowledge gap. When this equality of opportunity cannot be achieved in the discipline of public relations, the gap in knowledge increases. In this respect, public relations practitioners should find a way to keep up with the speed of technological developments and quickly apply these digital tools in the field.

With the tools used in digital public relations applications, institutions will have the opportunity to interact and interact with their target audience and stakeholders, thereby reducing the knowledge gap. It is not possible to completely separate the traditional and digital public relations tools, which are intertwined and should be used together according to the strategy and tactics in accordance with the target audience. Therefore, digital environments are used by public relations practitioners in research, planning, communication, and evaluation processes, as well as in areas such as social responsibility, crisis management, sponsorship, image management, organizational communication, advertising, and marketing. Digital public relations should play an active role in closing the knowledge gap with the target audience by using all these tools in harmony.

Digital public relations, conducted by institutions, agencies, and non-governmental organizations (NGOs), mitigate the information gap by effectively reaching the intended audience and facilitating interactive communication channels. To prevent a knowledge gap, it is imperative for public relations professionals to prioritize staying abreast of technology advancements and maintaining an open mindset toward innovations. Consequently, it is imperative to gather, examine, and assess data. The study demonstrates that public relations professionals must be able to adjust to the process of digitization to mitigate the information disparity for both their internal and external target audiences. The internet exhibits high speed in retrieving information, although it is susceptible to disseminating polluted information. In contrast to conventional media, this breakthrough has significant importance regarding information accessibility. The facilitation of widespread information distribution enables the potential reduction of information disparity. It is imperative for institutions, agencies, and non-governmental organizations (NGOs) alike to transition their public relations efforts to the digital realm. This shift is crucial in bridging the information divide and closing the gap between these entities and their target audience.

"Digital Public Relations in the Context of Knowledge Gap Theory" refers to the application of digital tools and strategies in the field of public relations, specifically in relation to the Knowledge Gap Theory. The Knowledge Gap Theory suggests that as information is disseminated, there is a gap between individuals with different levels of knowledge or information on a particular subject. In digital public relations, this theory can be applied to understand how digital platforms and technologies can bridge the knowledge gap and effectively communicate with various audiences. Digital PR professionals can leverage digital channels such as websites, social media, blogs, online forums, and email marketing to disseminate information and engage with their target audiences.

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#### **Author contribution statements**

The authors contributed equally to the research design and implementation, analysis, and the manuscript's writing.

#### **Disclosure statement**

The authors reported no potential competing interest.

#### **Ethics committee approval**

All responsibility belongs to the researchers. All parties were involved in the research of their own free will. The ethical approval document of this study is based on the permission document dated 14.08.2023 from Huawei Turkey, desiBel Agency, and TÜRKONFED officials.

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**Research article/Arařtırma makalesi**

Fostering future pioneers: Unveiling the entrepreneurial intentions of  
undergraduate students in Oman

*Raja TUMATI*

## Fostering future pioneers: Unveiling the entrepreneurial intentions of undergraduate students in Oman

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| Article Info   | Abstract   |
|--|--|
| <p><b>Research Article</b></p> <p>Received: 10 August 2023<br/>Revised: 26 September 2023<br/>Accepted: 28 September 2023</p> <p><b>Keywords:</b><br/>Entrepreneurship,<br/>Entrepreneurial intentions,<br/>Omani undergraduate students</p> | <p><i>This study aimed to examine the entrepreneurial intentions of Omani students. Because this study used analytical methods to provide measurable data, it adopted a quantitative approach to research and a deductive methodology. Purposive sampling, a non-probability sampling method, was used in this study. The Venesaar et al. (2014) standard questionnaire was modified to collect the data. 478 respondents provided data. The results showed that students were motivated to pursue business. The findings demonstrate that students have positive intentions toward entrepreneurship. I am willing to go to any length to become an entrepreneur (4.06), which had the highest mean score for student entrepreneurial intentions. Because all values were greater than 0.05, there was no evidence to reject the null hypothesis. This implies that the entrepreneurial intentions of undergraduate students in Oman are unaffected by factors such as family income, father's profession, education, or program of study.</i></p> |

### 1. Introduction

Every country strives to encourage the growth of entrepreneurship, since it is thought to be the basis for all industries since entrepreneurs create new business ideas that ultimately advance social and economic development (Khan, 2014). Therefore, various entrepreneurship assistance initiatives are being highlighted by authorities worldwide (Gurol & Atsan, 2006). Similarly, in Oman, there is much emphasis on promoting entrepreneurship among youth, especially graduates, as it can lead to economic growth and address the unemployment issue (Ashrafi & Murtaza, 2010). In 2013, the sultan of Oman, His Majesty Sultan Qaboos, emphasized the value of entrepreneurship in helping build the nation, lower unemployment, and lessen reliance on oil resources.

Consequently, numerous national-level measures to support entrepreneurship have been implemented (Khan, 2014). These measures include creating an ecosystem for entrepreneurs, offering assistance, and providing opportunities for new businesses. Established business accelerators and incubators provide access to networks, mentorship, and physical spaces. Additionally, Oman has established grants and financial programs to provide start-ups and business owners with financial support. Start-ups, SMEs, and business owners can apply for loans from Oman Development Bank. Efforts have been made to integrate entrepreneurship into the curricula of educational institutions to provide potential entrepreneurs with the skills and information they require (Magd & McCoy, 2014).

According to Fayolle & Gailly (2015), promoting the development of entrepreneurial skills globally places a greater emphasis on graduates. Lekhanya (2016) argues that it is essential to support graduates' entrepreneurial goals because doing so lowers poverty and increases employment opportunities. Similarly, the Ministry of Higher Education in Oman created a compulsory entrepreneurship course in 2015 (Bindah & Magd, 2016). This course must be taught to all students, regardless of their specialization, in all higher education institutions throughout the

\* This study is an expanded version of the paper presented orally at the "The 2nd Seminar on Business and Management: Value Creation for Creativity and Innovation", December 13, 2022, University Malaysia Sabah (UMS), Malaysia.

\*\* All responsibility belongs to the researchers. All parties were involved in the research of their own free will. Ethics committee approval is not required as this study did not collect data on humans using experiments, methods, practice, etc..

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country. This was done to encourage graduates to become entrepreneurs because of their increased business expertise and understanding of company risks (Ibrahim et al., 2017). Numerous studies have found that business development requires entrepreneurial intention more than any other factor. According to Nabi and Holden (2008), creating new businesses is a key predictor of entrepreneurial intention and attitude. Additionally, Van & Boshoff (2004) stated that educational institutions must ensure that students have positive attitudes towards entrepreneurship because these attitudes could aid in forming future ventures. Similarly, according to Douglas & Shepherd (2002), it is also critical to comprehend what drives students' intentions toward entrepreneurship and how to foster it because they are the future generation of business leaders and the backbone of society. By contrast, Liu et al. (2011) stated that intention cannot predict entrepreneurial endeavors. The author continues by pointing out that intending to launch a firm, not every prospective entrepreneur can carry out that desire, as the personal characteristics and surrounding environment of people with entrepreneurial intentions may prevent them from starting new businesses. The primary objective of this study was to examine the entrepreneurial intention of Oman's undergraduate students.

## 2. Literature review

Intentions, according to Ajzen (2011), express "*indications of a person's readiness to perform a behavior.*" Bird (1988) further defined entrepreneurial intention as an emotional state that leads to and guides a person's experiences, ideas, goal setting, commitment, and work-related concerns. Besides, Thompson (2009) clarified that entrepreneurial intention is not a 'yes or no' option; alternatively, it is a logical move from selecting self-employment over a company's paid job and committing to an entrepreneurial career. This idea was reflected in what Ajzen & Fishbein (1980) have called "*choice intention*" and "*latent entrepreneurship,*" which refer to a person who favors self-employment over employment with a salary. Ajzen & Fishbein (1980) believed that intention is a choice with commitment, and the attitude towards developing a new company endeavor defines a commitment to entrepreneurship. The transition from the commitment phase to the maturation phase, which comprises activities related to the new company venture, is the final stage in forming entrepreneurial intention and is known as "emergent entrepreneurship" (Reynolds et al., 2000). Such activities include collecting further information regarding new businesses by attending workshops, seminars, and courses on entrepreneurship; identifying capital sources; planning for equipment and facilities; and perfecting the business idea, which can offer extra benefits to the target consumers (Falck, 2012).

Bird (1988) asserts that both personal traits and the environment can influence a person's entrepreneurial purpose. In contrast, some entrepreneurship researchers contend that "individual variables" like personal qualities and "situational variables," such as the rate of inflation or regulations on business, provide relatively little insight into how entrepreneurial intention develops (Krueger & Carsrud, 1993). Some researchers, such as Reynolds et al. (2000), have concentrated on various groups of variables that have historically been thought to be predictors for making informed choices to start a new business: contextual factors, socio-demographic characteristics (e.g., gender, age, educational level, and employment status), and individuals' perceptual factors to understand how young people interpret self-employment opportunities (e.g., self-efficacy, ability to recognize opportunities, fear of failure, regretful thinking, and perseverance).

### 2.1. Education

The importance of entrepreneurship in a country makes colleges more accountable for providing students with the necessary entrepreneurial mindsets and skills. The responsibility of HEIs has increased because entrepreneurship programmes are crucial for the growth and revival of the economy as job creation is possible through entrepreneurship (Ahmed et al., 2020). Entrialgo & Iglesias (2016) stated that entrepreneurs who could start businesses increasingly safeguarded their prosperity and stability as more people were employed. Moreover, many studies have concluded that employment levels are always high in nations where entrepreneurial activities are both active and dynamic. Universities and colleges worldwide are planning and delivering programs for entrepreneurship (Ahmed et al., 2020), and the regularity of programme delivery has increased because of its significance to nations. However, Graevenitz et al. (2010) argued that the impact of mandatory versus optional enrolment in entrepreneurship programmes and their influence on student intentions were impossible to comprehend. Correspondingly, Souitaris et al. (2007) stated that study programmes in business and management frequently involve subjects such as financial management, marketing strategies, the business environment, and creativity, which can give students the groundwork they need to launch and operate a business. Engineering and computer science studies can provide students with the skills needed to develop innovative goods or to start technology-based businesses. On the other

hand, education empowers students to learn from their experiences and interact productively with their surroundings. Additionally, educational training presents and widens student horizons (Entrialgo & Iglesias, 2016). This means that an individual's capacity to sense morals and customs and economic and social attitudes influences students' maximum growth.

Entrepreneurship education signifies a unique pioneering approach in Oman and Arab states. According to Bilal & Hussien (2019), entrepreneurship education in Oman has received increased attention. The Oman government adopted specific steps to encourage entrepreneurship education. Entrepreneurship accelerates Oman's economic growth (Al-Harhi, 2017). Beginning in the 2015–2016 academic year, all HEIs will incorporate entrepreneurial skills into education through a course that supports the entrepreneurial mindset, introduces entrepreneurship for all disciplines, and promotes entrepreneurship activities (Belwal et al., 2015). As a result, many colleges in Oman have adopted programs that focus on entrepreneurship education to improve educational quality.

## *2.2. Family income & profession*

A family's influence will inspire a person's determination to start a business. However, this depends on the family's financial situation, environment, and interaction with their children (Wright et al., 2006). Few studies examine how family income affects self-employment or entrepreneurial goals. Topping & Tariq's (2011) study revealed a favorable relationship between family income and inclinations for self-employment. It follows that students' intentions to work for themselves would be higher, depending on their families' income. Similarly, Rusu et al. (2022) noted that by providing financial security, the family's economic position plays a critical role in enhancing entrepreneurial ambition. Students from wealthier families are more likely to take risks. According to Wright et al. (2006), most students lack resources and capital, making it difficult to start their businesses. For entrepreneurs, especially young ones, turning to their families for support has become a crucial strategy for dealing with financial issues (Rusu et al., 2022). However, Wang & Mellington (2011) noted that family income had a detrimental impact on the inclination to work for oneself. Students' willingness to launch a new business is decreased by rising family income because they fear failing; the opposite is also true.

Pablo-Lerchundi et al. (2015) claim that parents' occupations impact their children's entrepreneurial intentions. Compared with students whose parents are government or private employees, students from families with a business background are likelier to follow an entrepreneurial profession. Similarly, Crant (1996) asserted that a student's ambition to launch their own business is significantly influenced by growing up in an entrepreneurial family. Similarly, Megibaru (2014) suggested that entrepreneurs' children learn about the factors influencing running a firm and establishing a new company as an innate career option. However, Nguyen (2021) found no connection between students' entrepreneurial goals and family backgrounds. Based on the aforementioned discussion, this study proposes the following hypotheses: For the study, there are four variables: undergraduate students' family income, father's profession, education, and study program.

H1: There is no significant relationship between family income and students' entrepreneurial intentions.

H2: There is no significant relationship between fathers' occupations and the students' entrepreneurial intentions.

H3: There is no significant relationship between education and students' entrepreneurial intentions.

H4: There is no significant relationship between the study program and students' entrepreneurial intentions.

## **3. Methodology**

This study is an expanded version of the paper presented orally at the "The 2nd Seminar on Business and Management: Value Creation for Creativity and Innovation", December 13, 2022, University Malaysia Sabah (UMS), Malaysia. All responsibilities belong to the researcher. All parties were involved in the research out of their own free will. Ethics committee approval was not required, as this study did not collect data on humans using experiments, methods, practices, etc.

The deductive research technique was used for this study, which entails progressing from general to specific by beginning with a theory, drawing hypotheses from it, testing those hypotheses, and then amending notions (Babbie, 2010). In addition, a quantitative research methodology was used because it quantifies the data and uses statistical or mathematical methods to identify the cause-and-effect relationships between variables (Kothari, 2010). Descriptive research methods were used in this study because they accurately reflected the characteristics

of the population in question or the phenomenon being studied. This methodology places more emphasis on the "what" of the research issue than the "why." Purposive sampling was used in this study. Bernard (2022) claims that the "purposeful sampling" non-probability sampling technique chooses a sample that reflects the author's expertise. According to Creswell (2014), this is known as "judgmental" or "authoritative" sampling. In total, 478 participants were included in this study. In this study, the questionnaire created by Venesaar et al. (2014) was employed. The questionnaire was modified to suit the needs of this study. Because it safeguards the anonymity of respondents' antecedents, the use of survey questionnaires is widely recognized in business and managerial circles (Edmonds & Kennedy, 2010). The items were rated on a scale of one to five points, with 1 denoting "strongly disagree" and 5 denoting "strongly agree," Cronbach's alpha was 0.930.

Defining problems, testing hypotheses, developing solutions, analyzing data, drawing inferences, and arriving at conclusions are all parts of conducting research (Bernard, 2022). Additionally, Creswell (2014) stated that it is important to thoroughly assess the study's findings to determine whether they are compatible with the original hypothesis. Furthermore, according to Kothari (2010), the researcher can test any preconceived notions after analyzing the data. The typical question to be answered when testing a hypothesis is whether the statistics support the ideas or contradict them. The data were analyzed using frequency distribution, percentages, rank, and weighted mean. The frequency distribution is a statistical tool employed to calculate the frequency of respondents who fulfill a certain stated profile, such as gender, age, and marital status. It also determines the distribution of the respondents. This percentage was used to calculate the percentage of respondents and the proportion of those who fit a particular profile. To assess the hypotheses, additional pertinent statistical methods, such as chi-square tests, were also used.

## 4. Results and analysis

### 4.1. Profile of the respondents

The respondents' demographic makeup is presented in Table 1. Women constituted 62.6 percent of the total sample, whereas men accounted for 37.4 percent. The national population of Oman (NCSI, 2020), which has a male population of 61.3 percent and a female population of 38.7 percent, does not match these findings. Finally, the majority of survey participants were women. Another factor was that 69 percent of the survey respondents were between 22 and 25. According to NCSI (2020), 60% of Omani citizens are aged between 21 and 26. Therefore, the estimations and findings are in agreement. In addition, 14.4% of the respondents were between the ages of 26 and 30, 12.1% were between the ages of 31 and 35, and 4% were 36 or older. The respondents were divided into three groups: 40.8 of them lived in Muscat, the Sultanate of Oman's capital; 34.7 percent lived in villages; and the rest (24.5%) resided in other places across Oman. Of those surveyed, 71.3% had graduated from high school, and 28.7% had a higher diploma. Of those who participated in the survey, 24.7% took hospitality and tourism management courses. With a 20.3 percent share, business management is the next-highest domain, followed by accounting and finance (19.7 percent) and human resources management (18.4 percent). Nursing, agriculture, and engineering were other subjects; 8.6 percent of the students took them, while 8.4 percent chose event management. In 39.3 percent of cases, the respondents' fathers were government employees, 15.1 percent had businesses, and 14.2 percent were retired. In addition, 11.7% of the respondents worked in the private sector, 9.6% in agriculture, and 10% were unemployed. The data show that 50.4 percent of the respondent's family income is from revenue up to RO 1,000. Of the respondents, 15.9% said their family income was higher than that of RO 3001, while 18% were unsure. Additionally, 7.5% of the respondents reported a monthly income between RO 1001 and 2000, while 8.2% claimed a monthly income between RO 2001 and 3000. Thus, less than RO 1000 was the monthly income of half of the respondents' families.

Table 2 presents the results of the reliability statistics. Cronbach's alpha was used to test reliability across multiple dimensions. Entrepreneurial intention has an alpha value of 0.930. The high rating, with a value of > 0.7, implies that the presented items have strong internal consistency.

### 4.2. Student's entrepreneurial intention

Table 3 outlines the entrepreneurial intentions of the Omani students. The first, third, and fifth highest-rated entrepreneurial intentions were 'I am willing to go to any length to become an entrepreneur' (4.06), 'the knowledge I acquired in college has helped me become an entrepreneur' (4.04), and 'the college environment encouraged me to develop creative ideas for being an entrepreneur' (3.77). All three factors were found to be positively related to entrepreneurial intentions. However, the second and fourth entrepreneurial intentions rated by respondents are 'working for the government seems attractive to me' (4.05) and 'working in the private sector was attractive to me'

(3.82). This suggests that respondents were more likely to choose to work for private or public companies, which contradicts the spirit of entrepreneurship. However, one of the essential needs of young people is financial stability, and most believe that finding work is the best path to financial freedom.

Similarly, other statements were found at the sixth, seventh, and eighth spots: 'I am determined to create my own business in the future' ( $X=3.75$ ). 'If I open my own business, my teacher, friends, and family would appreciate it' ( $X=3.72$ ), and 'entrepreneurs tend to rise in social status' ( $X=3.61$ ). According to respondents, starting a business would earn a lot of support from their loved ones. In any society, support from teachers, friends, and family is crucial for young entrepreneurs, and the absence of these factors has detrimental effects. On the other hand, the respondents were determined to create their businesses in the future, a common characteristic of entrepreneurs. Furthermore, 'joining the government will earn respect from my family and friends' ( $X=3.45$ ), which is in the tenth spot, whereas 'having the freedom to express myself is attainable only through business' ( $X=3.58$ ), which is in the ninth spot. The respondents acknowledged that business owners typically hold prominent positions in society and favor working for themselves. Finally, 'I would rather be my boss than work for someone else' ( $X=3.23$ ), which has the lowest reported mean score. This suggests that the respondents preferred to be their bosses rather than work for someone else. This can be inferred from the statement that these students were unprepared to launch their firms. Most young entrepreneurs first prefer to earn money and then start a business, which is understandable.

Table 1. Demographic profile of the respondents

|                                 | Frequency | Percent |
|---------------------------------|-----------|---------|
| 1. Gender                       |           |         |
| Male                            | 179       | 37.4    |
| Female                          | 299       | 62.6    |
| 2. Age (Optional)               |           |         |
| 20-25                           | 332       | 69.5    |
| 26-30                           | 69        | 14.4    |
| 31-35                           | 58        | 12.1    |
| 36 and above                    | 19        | 4.0     |
| 3. Permanent residing area      |           |         |
| City, i.e., Muscat              | 195       | 40.8    |
| Town                            | 117       | 24.5    |
| Village                         | 166       | 34.7    |
| 4. Education                    |           |         |
| Diploma                         | 137       | 28.7    |
| Graduation                      | 341       | 71.3    |
| 5. The Program of study         |           |         |
| Tourism and Hospitality         | 118       | 24.7    |
| HR Management                   | 88        | 18.4    |
| Accounting and Finance          | 94        | 19.7    |
| Event Management                | 40        | 8.4     |
| Business Management             | 97        | 20.3    |
| Other                           | 41        | 8.6     |
| 6. Parent's Occupation - Father |           |         |
| Own Business                    | 72        | 15.1    |
| Salaried Employee Private       | 56        | 11.7    |
| Salaried Employee Government    | 226       | 39.3    |
| Retired                         | 73        | 14.2    |
| Agriculture                     | 41        | 9.6     |
| Unemployed                      | 48        | 10      |
| 7. Family Income                |           |         |
| Up to OMR 1000                  | 241       | 50.4    |
| OMR 1001 to 2000                | 36        | 7.5     |
| OMR 2001 to 3000                | 39        | 8.2     |
| OMR 3001 and above              | 76        | 15.9    |
| Do not know                     | 86        | 18.0    |

Source: Author's calculation



Table 2. Reliability statistics

| Dimension                 | Cronbach's Alpha | No of items |
|---------------------------|------------------|-------------|
| Entrepreneurial intention | .930             | 11          |

Source: Author's calculation

Table 3. Entrepreneurial intentions of Omani undergraduate students

| Entrepreneurial intentions   | $\bar{X}$ | Verbal interpretation | SD    | Rank |
|--|-----------|-----------------------|-------|------|
| I am willing to go to any lengths to become an entrepreneur.                               | 4.06      | Strongly Agree        | 1.130 | 1    |
| Working for the government seemed attractive to me.  | 4.05      | Strongly Agree        | 1.045 | 2    |
| My early exposure to entrepreneurship inspired me to start my own business in the future.  | 4.04      | Strongly Agree        | 1.143 | 3    |
| Working in the private sector is attractive to me.   | 3.82      | Agree                 | 1.228 | 4    |
| The college environment encouraged me to develop creative ideas for being an entrepreneur. | 3.77      | Agree                 | 1.312 | 5    |
| I am determined to create my own business in the future.                                   | 3.75      | Agree                 | 1.121 | 6    |
| If I start my own business, my teacher, friends, and family will respect me.               | 3.72      | Agree                 | 1.186 | 7    |
| Entrepreneurs generally achieve a higher position in society.                              | 3.61      | Agree                 | 1.243 | 8    |
| Freedom to express myself is possible only through entrepreneurship.                       | 3.58      | Agree                 | 1.184 | 9    |
| If I join a government job, my family and friends will respect me.                         | 3.45      | Agree                 | 1.302 | 10   |
| I would rather be my own boss rather than work for someone else.                           | 3.23      | Agree                 | 1.358 | 11   |
| Total  | 3.75      | Agree                 | 1.213 | 11   |

Source: Author's calculation

Table 4. Chi-Square test - family's income per month \* Entrepreneurial intention

| Test               | Value  | df | Asymptotic significance (2-sided) |
|--------------------|--------|----|-----------------------------------|
| Pearson Chi-Square | 25.807 | 16 | .057                              |

Source: Author's calculation

Table 4 shows that the chi-square test was not significant (sig. value is  $0.057 > 0.05$ ), and the null hypothesis cannot be proven to be incorrect. This indicates that there is no conclusive link between family income and respondents' entrepreneurial intentions to start their own businesses. This finding implies that entrepreneurial intention is independent of family income.

Table 5 shows that the chi-square test was insignificant (sig. value of  $0.207 > 0.05$ ), thus the null hypothesis cannot be disproved. This indicates that there is no conclusive relationship between fathers' professions and the students' entrepreneurial intentions. This implies that the father's profession has no bearing on entrepreneurial intentions.

Table 5. Chi-Square Test - Father's occupation \* Entrepreneurial intention

| Test               | Value  | df | Asymptotic significance (2-sided) |
|--------------------|--------|----|-----------------------------------|
| Pearson Chi-Square | 24.855 | 20 | .207                              |

Source: Author's calculation

Table 6. Chi-Square Test - Education \* Entrepreneurial intention

| Test               | Value | df | Asymptotic significance (2-sided) |
|--------------------|-------|----|-----------------------------------|
| Pearson Chi-Square | 7.290 | 4  | .121                              |

Source: Author's calculation

Table 6 shows that the chi-square test was not significant (sig. value is  $0.121 > 0.05$ ), and the null hypothesis cannot be proven to be incorrect. This indicates no conclusive relationship between students' entrepreneurial intentions and educational backgrounds. Therefore, entrepreneurial intention was not dependent on the respondents' education.

Table 7. Chi-Square Test - Program of the study \* Entrepreneurial Intention

| Test               | Value  | df | Asymptotic significance (2-sided) |
|--------------------|--------|----|-----------------------------------|
| Pearson Chi-Square | 19.210 | 20 | .508                              |

Source: Author's calculation

Table 7 shows that the chi-square test was not significant (sig. value is 0.508 > 0.05), and the null hypothesis cannot be proven to be incorrect. This indicates no conclusive relationship between the study's program and respondents' intentions to start a business. This implies that entrepreneurial intention was unrelated to the respondents' program of study.

Table 8. Null Hypotheses

| Null hypotheses   | Sig. value | Result   |
|---|------------|----------|
| H1: There is no significant association between family income and students' entrepreneurial intentions.               | 0.057      | Accepted |
| H2: There is no significant association between the fathers' occupation and the students' entrepreneurial intentions. | 0.207      | Accepted |
| H3: There is no significant association between education and students' entrepreneurial intentions.                   | 0.121      | Accepted |
| H4: There is no significant association between the study programme and students' entrepreneurial intentions.         | 0.508      | Accepted |

Source: Author's calculation

Because all values in Table 8 are greater than 0.05, the chi-square test is not significant, indicating that there is not enough data to rule out the null hypothesis. This shows that in Oman, there is no significant relationship between family income, father's profession, education, study course, and students' intentions towards entrepreneurship. It is assumed that students' intentions towards entrepreneurship are unaffected by family income, the nature of their father's job, education, or course of study.

## 5. Discussion and conclusion

### 5.1. Discussion

The three statements in Table 3 confirm that students' intentions towards entrepreneurship are strong, indicating that they are willing to go to any length to become entrepreneurs (4.06), they are determined to start their own company in the future (3.75), and they would prefer to be their bosses rather than work for someone else (3.23). These findings are compatible with research that indicates that individual characteristics influence the intention to start a business (Thomas, 2009; Robinson et al., 1991). People more likely to launch a new business have a high degree of confidence, uncertainty acceptance, and internal locus of authority. However, while examining the relationship between people's qualities and goals, this research did not consider sociocultural elements, such as training, entrepreneurial family status, and cultural identity. However, the results contradict the research conducted in Oman by Saleh (2012), who found that respondents thought starting a business in Oman was too risky and that there was too much competition. Besides, they were unaware of government support systems for launching a business in Oman.

Table 3 further reveals that respondents' early exposure to entrepreneurship inspired me to start my own business in the future (4.04); the college environment encouraged me to develop creative ideas for being an entrepreneur (3.77); and their teachers, friends, and family respected them if they started their own business (3.72). These results align with those of Fayolle & Lián (2013), who examined how educational programs affect individuals' aspirations and opinions about starting their businesses. They found that exposure to entrepreneurship courses had a significant impact on students' aspirations to start a business later in life. The findings also support research by Sanchez (2013), who found that students benefited significantly from the entrepreneurial training course. Sánchez added that entrepreneurial training courses have an undeniable positive effect on learners. However, Oyugi (2015) concluded that because entrepreneurial education programs are theoretical and offer little opportunity for hands-on experience, their impact on students is restricted. However, Matlay (2009) found that most graduates were satisfied with the results of their entrepreneurial education. Starting a business later in life is beneficial. Conversely, Chrisman et al. (2012) find that, while entrepreneurship programs promote start-up development, they do not impact business performance. These findings conflict with those of Oyugi (2015), Matlay (2009) and Chrisman (2012).

However, respondents believed that working in either the public or the private sector was important. 'Working in the government sounded appealing to them' (4.05), 'working in the private sector sounded appealing to them' (3.82), and 'if they joined the government, their families and friends would respect them' (3.45). The students' intentions were entirely plausible and the findings were consistent with those of other countries. Initial employment is essential for students because it provides much-needed training and enables them to save money for future business. The results support Ibrahim et al. (2017), who found that despite having favorable attitudes towards entrepreneurship, Omani students remain hesitant to launch their enterprises. According to this study, while entrepreneurship education had a positive effect on students' attitudes toward entrepreneurship, it had a significantly negative influence on how they perceived the social norms surrounding businesses. However, investigations conducted in Oman by Amma & Fahad (2013) and Al-Harrasi & Al-Salti (2014) have shown the opposite.

Table 8 concludes that the findings imply that students' intentions to become entrepreneurs are not influenced by family income, father's profession, schooling, or academic program. Students' entrepreneurial intentions depend on various circumstances. Research on entrepreneurship has shown that education impacts cultural values and entrepreneurialism (Morris et al., 2013). For instance, early education and transferrable abilities learned throughout higher education are important factors in creating qualities typically linked to entrepreneurial behavior (Casson, 1991; Ronstadt, 1985). Additionally, according to Fayolle & Lián (2013), entrepreneurial programs can result in the formation of new businesses and have a favorable impact on the regional economy. However, there has not been much investigation of the effectiveness of these programs in underdeveloped nations. Additionally, Fayolle & Gailly (2015) point out a notable lack of evidence on the results of entrepreneurship education. Similarly, according to Graevenitz et al. (2010), nothing is known about how entrepreneurship programs affect students' ambitions to launch businesses. Furthermore, Fayolle & Lián (2013) noted that several of the outcomes of current investigations are vague or inconsistent.

### 5.2. Conclusion

Finally, policymakers, researchers, educational institutions, and parents who encourage undergraduates to engage in entrepreneurship can collaborate to address unemployment and other economic issues. One of the most important factors encouraging students to pursue entrepreneurial careers is parental encouragement. Entrepreneurial training initiatives should favorably influence and foster students' entrepreneurial abilities and skills. Consequently, educational initiatives must ensure students receive adequate training and practical knowledge to thrive. Based on the results, the highest mean entrepreneurial intention score was the willingness to go to any length to become an entrepreneur. Other major factors concerning these respondents were recorded, indicating that students were more comfortable working for public and private entities than entrepreneurs. The students' intentions were consistent with the fact that they were not yet ready to start their businesses. Understandably, most young entrepreneurs want to earn money before starting a business. Furthermore, the study found no significant relationship between family income, the father's occupation, education, study program, and students' intentions toward entrepreneurship in Oman. It presupposes that family income, father's occupation, education, or study program do not influence students' intentions to become entrepreneurs. Future research should focus on entrepreneurial intention in terms of contextual factors, as a person is encircled by a broad range of economic, social, cultural, technological, and demographic factors. As a result, entrepreneurial intention cannot be separated from contextual factors.

### 5.3. Recommendations

The results of this study suggest that colleges, universities, and other educational establishments should concentrate their efforts on encouraging students to pursue entrepreneurship training, as those who do so display a noticeably stronger entrepreneurial inclination. Besides, colleges should increase the number of entrepreneurship programs and training options available and give students from all degree programs the chance to enroll in entrepreneurial programs. As this may affect students' inclination to undertake entrepreneurship, all stakeholders in Oman must cooperate to promote their views of entrepreneurship as a feasible career path. Finally, to create a favorable picture of entrepreneurship on campuses and encourage students to realize their entrepreneurial goals, colleges can promote entrepreneurship through company owners and role models.

### 5.4. Limitations

A limited number of students from five colleges in Oman served as the study respondents. The restricted range of response variables was also assessed. Only 478 responses were received despite the questionnaire being issued to almost all students at the five colleges. Therefore, the outcomes of this research were limited to people in their

sample. The most populous regions in Oman and its capital city, Muscat, were the study locations. As a result, if the study had been undertaken in another region of the nation, the results might have been different because the student bodies at some particular universities may have been more varied. Therefore, future research should consider duplicating this study to other regions of the nation. For instance, entrepreneurial objectives may change over time and may be influenced by other variables not addressed in this study. In subsequent investigations, the sample size and variables were increased.

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***Author contribution statements***

Since it is a single-author article, all contributions belong to Raja Tumati.

***Disclosure statement***

The author reported no potential competing interest.

***Ethics committee approval***

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Letter recognition and hand-copying skills of children: A comparative study of  
Dari and English alphabet letters

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## Letter recognition and hand-copying skills of children: A comparative study of Dari and English alphabet letters

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| Article Info   | Abstract   |
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| <p><b>Research Article</b></p> <p>Received: 10 February 2023<br/>Revised: 20 June 2023<br/>Accepted: 21 June 2023</p> <p><b>Keywords:</b><br/>English and Dari alphabet,<br/>Letter recognition,<br/>Hand-copying,<br/>RAN,<br/>Preschoolers</p> | <p>The study comparatively examined the difficulty level in recognizing Dari and English alphabet letters and hand-copying skills among children. The study participants were pre-school children between four and five years old at the time of the study. The participants were administered a pretest, a class session, and a post-test. The data was analyzed by Rapid Automatized Naming (RAN), descriptive statistics, and a paired samples T-test. The study's findings showed no significant difference in letter recognition between English and Dari letters; however, there was a significant difference in the hand-copying test. Also, the study's results revealed that the shapes of the letters played an important role in hand-copying the alphabet letters, while it did not impact the letter recognition process.</p> |

### 1. Introduction

Alphabet books were designed to teach and attract children's attention to the letters to help them learn the alphabet better, which is important for learning to read and write (Lonigan et al., 2013). There are some views regarding learning writing in children. It is believed that the experience of handwriting, in printing letters form, impacts significantly the early letter knowledge skills (Aram, 2006; Aram & Biron, 2004; Longcamp et al., 2005; Lonigan et al., 2011; Neumann, Hood, & Ford, 2013). In their study, Lonigan et al. (2011) asked children participants to write the letters and their names, and the experimental group displayed more expressive knowledge, print knowledge, and phonological awareness than the control groups. Zemlock et al. (2018) assert that comparing authentic handwriting with other sensorimotor interventions plays a vital role in displaying the impact of handwriting on emergent literacy.

To understand the formation behind the impact of handwriting on letter recognition, comparing handwriting to a non-active control condition is essential, as Li and James (2016) compared handwriting to a visual-only learning condition. Their study showed that the groups who studied typed letter forms learned less than those who studied handwritten forms either through tracing, viewing, or seeing during writing. Puranik et al. (2013) believe that the most difficult English letters for children to write are J, G, Q, and R. Thus, all the letters are not equally difficult or easy while writing. Zemlock et al. (2018) have indicated that practicing handwriting to learn symbols is more effective than exposure to them at the same time. Their study showed that children who practiced producing letters were better at letter recognition than their peers, who were exposed to the letters for the same amount of time but never produced the letters by hand. They further asserted that practicing numbers by hand can also improve subsequent letter recognition. According to Samuels (1970), there are similarities between learning to name the alphabet letters and learning to recognize names such as animals, flowers, airplanes, birds, and numerous other

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objects in our environment. He also labeled these letters as confusing: b, d, p, q, h, u, v, n, c, e, u, s, y, h, k, t, m, n, w, r, x, z, v, w, f, l, t, h, a, r, e, s, I, j, y, l.

As far as the authors are concerned, no study has examined preschoolers' recognition of Dari and English alphabet letters. The current study comparatively examines the difficulty level of recognition and hand-copying of English and Dari alphabet letters. In sections two and three, the authors discuss literature relevant to the study and present the methodology of the study. In section four, the authors present the study's results, followed by section five, in which the interpretation of the findings is presented. In section five, the conclusion and implications of the study are presented.

## **2. Literature review**

Travers (1967) asserted that in symbolic and verbal learning, some of the information from the pre-perceptual field is chosen and kept in short-term memory. It is a stage in which selected data in short-term memory is transferred to long-term memory by being hooked up to earlier saved information stored in long-term memory. Learning the alphabet letters requires individuals to differentiate them visually. Children need not just a common discrimination training for naming the letters. Rather, visual discrimination training can assist the children in remembering the exclusive shapes of the alphabet letters. These features differentiate between identifiable and different letters (Samuels, 1970). NELP suggests significant correlations in post-reading abilities, including decoding, reading comprehension, and spelling, created by name-writing skills (National Early Literacy Panel, 2008). Previous writing abilities like uppercase, lowercase, and letters and words prevent upcoming reading problems (Snow et al., 1998). Gibson et al. and Dunn-Rankin's study show that letters (such as T) with angular intersections and gaps in their lines are common letters easily recognized (Dunn-Rankin, 1990; Gibson et al., 1962). In an experiment with children between 4 and 8 years old, Gibson et al. (1962) examined whether children could recognize the topological transformation of the letters. The results showed that the children could contrast the transformations that differentiated actual letters. Regarding gender, Puranik, and his colleagues stated that girls were better at writing letters correctly than boys (Puranik et al., 2013). Their study results complied with Berninger and Fuller (1992) study in which girls in elementary grades were better at remembering letters from orthographic memory for writing than boys.

Like experts, it is still unclear whether children only process a small part of letter forms (Dunn-Rankin, 1990; Fiset et al., 2008, 2009). The method by which children process letter forms predicts the ease of learning letters. Much practice is possibly needed before the critical dimensions of letter forms are stored in children's memory, and children instantly recognize a letter form by concentrating on the critical dimensions of the form (Both-de Vries & Bus, 2014). Also, the research among adults shows that expert readers identify letters by fixating only on small parts of the letter (Dunn-Rankin, 1990; Fiset et al., 2008). Fiset et al. (2008) used the so-called bubbles, a classification image technique, to investigate which areas of letters help most to recognize lower- and upper-case Arial letters. This task was conducted by covering a part of each of the letters with bubbles so that it was possible to test which features were essential for letter identification. The results showed that line terminations were the most critical features for letter identification. That is, "the inferior termination of the uppercase 'C' clearly allows the discrimination of this letter form from the uppercase letters 'G,' 'Q' and 'O', and is, in fact, sufficient for the correct identification of 'C'" (p. 1166). The areas described as distinct features by Dunn-Rankin (1990), are the lower quarter of most letters that attract few fixations, particularly when letters include ascending vertical lines like h and k. The study is similar to Gibson et al. (1962). The lower quarter of most letters involved few fixations, especially with letters including ascending verticals like 'h' and 'k.' The angular intersection of the letters appeared to be a unique feature for the letters 'x,' 'v,' and 'w.' For 'C,' fixation was placed close to the opening at the right side and included more of the letter's background than the letter itself. When letters have more than one distinctive feature, such as an angular intersection plus an ascending vertical in the letter 'k,' both areas can attract eye fixations (Both-de Vries & Bus, 2014).

Fixation, in the literature, is another factor in learning the alphabet letters. It was not yet revealed whether new readers identify letters by focusing on their unique features. It is a plausible assumption that children begin familiarizing themselves with the forms of letters at an early age if they grow up in a society where people are literate. The print is exposed to children continuously. The fixation duration will reduce if children are more familiar with the letter forms (Both-de Vries & Bus, 2014). According to Evans et al. (2009), about one-third (over 20%) of children's time is spent looking at letters.

One of the assessment methods in reading is Rapid Automatized Naming (RAN). Di Filippo et al. (2005) conducted their study's RAN test in two-step tasks. The first one asked the participants to name the items loudly, and in the second task, the participants crossed out a specific stimulus, e.g., 9 digits naming every time they faced it. Their conclusion suggests that only the naming procedure was significantly correlated with reading. In another study, Goerge et al. (2013) suggest that reading and RAN were related due to their serial processing need. They said there was a considerable correlation between RAN and oral reading fluency. It is worth mentioning that co-curricular activities can also enhance the reading outcome in language acquisition (Titrek et al., 2016). During conducting RAN, naming speed can significantly affect learners' second language word recognition explanation (Geva & Wade-Woolley, 1998). Gholamain & Geva's (1999) concluded that speed naming and working memory in the Persian language are more stable predictors of word recognition than in English. Their study also showed that regardless of language proficiency and age, a robust explanatory framework for first and second-language basic reading abilities can be provided by considering the speed of letter naming and working memory. The relationship between the speed of naming and reading patterns remained consistent, while the relationship between such processes to comprehension became progressively marginal with reliance on higher-level cognitive processes (Bowers et al., 1988; Wolf et al., 1986).

Dari has 32 alphabet letters, many of which are shared by Arabic. It has a one-to-many sound-to-symbol correspondence. Sounds can own a lot of graphical representations. Thus, irrelevant semantic words created from these letters appear to be the same (Gholamin and Goa, 1999). The direction of Persian alphabet letters is from right to left (Khanlari, 1979). Therefore, there is no visual similarity between the Persian and Roman alphabet writing systems (Baluch, 1996). There are three long vowels in Dari /i/, /u/, and /a/. Each vowel is represented by six spoken vowels, a letter, and three short vowels, /e/, /o/, and /ae/. Lack of diacritics for short vowels usually does not create a problem for advanced readers because by using alternative sources of knowledge, they can read and interpret the words (Baluch & Besner, 1991; Rabia, 1997). The Dari language has a consistent graphemes-to-phonemes rule because every grapheme has a single pronunciation. However, the script in the Dari language is poly-graphic because more than one grapheme characterizes several phonemes. For instance, three various graphemes represent the /S/ phoneme, and four graphemes represent the /Z/ phoneme. There is a possibility that the relative contribution of phonological skill and orthographic skill may display different patterns in performing tasks since Dari does not preserve the same level of orthographic complexity for reading (less complex) and spelling (more complex). Dari's writing is expected to facilitate the use of grapheme-to-phoneme rules of adaption for young readers as do other consistent and regular texts. Meanwhile, learning visual vocabulary should be eased by effective phonological skills (Frith, 1985; Gough et al., 1992).

## 2. Methodology

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### 2.1. Context of the study

There are over 35 languages that are spoken in Afghanistan, where Dari, Pashto, and Uzbek have the most speakers. Dari and Pashto are the official languages of Afghanistan, and other languages, e.g., Uzbek, is considered the official language in places with the majority of speakers (Orfan, 2023; Afghanistan, 2004). Dari, as one of the varieties of Persian, dominates business, politics, and education in the country; therefore, it is considered as the lingua franca of Afghanistan (Central Intelligence Agency, 2019). In Tajikistan, Persian is the official language which is called Tajiki; however, it is renamed as Dari in Afghanistan in 1964, but still, it is commonly called Farsi (Persian) (Spooner, 2012). Dari is also the language of instruction at universities and schools in many parts of the country (Central Intelligence Agency, 2019; Coyle, 2014; David, 2014, Orfan & Seraj, 2022).

Dari alphabet has 32 letters whose traditional alphabetical order is shown below.

ا ب پ ت ث ج چ ح خ د ذ ر ز س ش ص ض ط ظ ع غ ف ق ک گ ل م ن و ه ی

There is always one sound for a letter in Dari. Unlike the English alphabet, two letters never combine to produce a single sound. For instance, the single sound /ʃ/ should be spelled using letters such as /sh/, /tio/, and /sio/... while it is /ش/ in Dari. On the other hand, four sounds are produced by more than one alphabet letter. For example, the letters producing /S/ sound are /ث/ /س/ and /ص/ in which the letter /س/ is used more often than the two other ones. Likewise, /ت/ and /ط/ produce the /t/ sound. Words with a /t/ sound are frequently spelled with /ت/

and are rarely spelled with / ط /. The /z/ sound can be spelled as / ز /, / ذ /, / ض / or / ظ / and / ز / is used more than others. / ه / and / ح / are used to produce the /h/ sound; both letters are almost used equally (Sultany, 1977).

English is learned and taught as a foreign language in Afghanistan, and it is one of the major courses at schools and at universities in Afghanistan (Arab & Orfan, 2023). English has four main areas of usage: to connect with people abroad, to study in other countries, in the media, and translate and interpretation (Coleman, 2019; Orfan, 2020). The English language use improved gradually after the Soviet Union withdrew from Afghanistan in 1989. Learning English became popular after the arrival of American troops and international organizations in the country in 2001 (Azami, 2009; Orfan, 2021). In addition, English plays a vital role in employment and academic career in higher education institutions.

## 2.2. Research design

A mixed approach was used to carry out this research. Descriptive and paired samples *T*-tests were used to analyze the data. Rapid Automatized Naming (RAN) test plus naming speed were observed as a measurement instrument. The participants were given a pre-test followed by training sessions and a post-test to observe their responses to 10 Dari and 10 English alphabet letters.

## 2.3. Participants

The participants of the study were 12 children, who were between 4 and 5 years old. They were living in Taloqan City, a northeastern city of Afghanistan, at the time of the study. Half of the respondents (6) were male. The respondents were speakers of the Dari language. The participants were preschool children not previously exposed to direct or indirect English or Dari alphabet letters. To ensure whether the participants were exposed to indirect alphabet learning, e.g., watching alphabet learning cartoon shows, a pre-test was applied in which two participants were disqualified for the study; they were not included. A consent letter regarding the children's participation was developed and signed by the participant's parents.

## 2.4. Data collection instrument

The literature review was conducted to arrange the research design. One of the factors to be considered regarding the teaching sessions was the attention span, whether to adjust the session for 10 minutes, 15 minutes, more or less. There were controversial opinions about this topic. Davis (1993) states that "...student attention during lectures tends to wane after approximately 10–15 minutes." Likewise, Wankat (2002) claims, "Although student attention rises at the beginning of a session, it reaches a lower point after 10–15 minutes. However, according to Bradbury (2016), the greatest variability in student attention arises not from the teaching format but from teacher differences. A teacher's responsibility is to enhance their teaching skills to provide a satisfying lecture experience for the students and rich content. Therefore, the teaching sessions for observation were set for 30 minutes and run by effective teaching methodology. Both English and Dari alphabet teaching sessions for letter recognition took place in the morning, half an hour after the participants had breakfast.

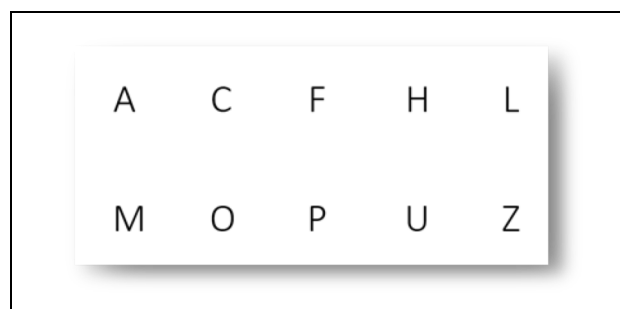


Figure 1. English uppercase letters selected for letter recognition and hand-copying tests

There was only one session per day to prevent the participants' boredom and keep them refreshed for the sessions. A Rapid Automatized Naming (RAN) test was applied to assess the participants' letter recognition. RAN is the ability to name visually presented familiar symbols such as objects, colors, digits, and letters as quickly as possible (Denckla, 1972). According to George et al. (2013), RAN is linked with reading because it involves oral production of the names of the stimuli and serial processing. To avoid confusion among the participants and

achieve the best results, only one representation was selected out of the whole group of similar letters, such as multi grapheme letters like /س/, /ص/, /ث/, or /ز/, /ض/, /ظ/. The same procedure was applied in English letters as well. Therefore, only one letter was selected for the observation, e.g., from C or G and Q or O (Dunn-Rankin, 1990). In addition, the most complicated letters for children like J, G, Q, and R (Puranik et al., 2013) were deselected in the list of letters for letter recognition and hand-copying test. After the letter recognition test, 10 English uppercase letters (Figure 1) and 10 Dari letters (Figure 2) were projected, and the participants were asked to hand-copy the letters. These are the letters chosen for the test.

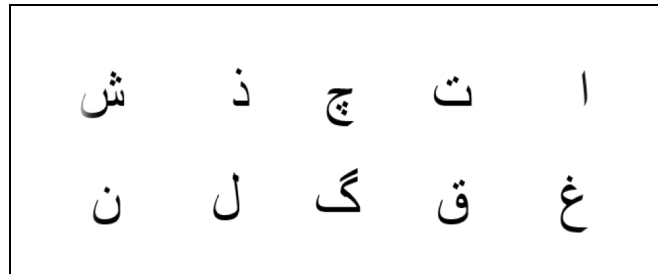


Figure 2. Dari letters selected for letter recognition and hand-copying tests

### 2.5. Data analysis

The researcher recorded the participants' responses to RAN for the letter recognition and hand-copying tests. Descriptive statistics determined the data's mean, frequency, and standard deviation. Also, a paired samples T-test was used to evaluate the significant difference between the participants' English and Dari letter recognition and hand-copying abilities. The tests were run in Statistical Package of Social Science (SPSS version 26.0).

### 3. Results

The participants (N=12) were given a pre-test on Dari and English letter recognition and Dari and English writing before conducting learning sessions. The pre-test results indicated that the participants had zero knowledge of Dari and English letters (Table 1).

Table 1. Results of the participants' pre-test

| No | D.L.Re.R.T | E.L.Re.R.T | D.L.Wr.T | E.L.Wr.T |
|----|------------|------------|----------|----------|
| 1  | 0          | 0          | 0        | 0        |
| 2  | 0          | 0          | 0        | 0        |
| 3  | 0          | 0          | 0        | 0        |
| 4  | 0          | 0          | 0        | 0        |
| 5  | 0          | 0          | 0        | 0        |
| 6  | 0          | 0          | 0        | 0        |
| 7  | 0          | 0          | 0        | 0        |
| 8  | 0          | 0          | 0        | 0        |
| 9  | 0          | 0          | 0        | 0        |
| 10 | 0          | 0          | 0        | 0        |
| 11 | 0          | 0          | 0        | 0        |
| 12 | 0          | 0          | 0        | 0        |

\*D.L.Re.R.T = Dari Letter Reading Recognition Test

\*E.L.Re.R.T = English Letter Reading Recognition Test

\*D.L.Wr.T = Dari Letter Writing Test

\*E.L.Wr.T = English Letter Writing Test

The authors conducted learning sessions for the participants, and they were given posttest. As Table 2 shows, the teaching sessions significantly impacted children's learning of English and Dari alphabet letters. Furthermore, students' total score for the Dari RAN Test is 48, while it is 46 for the English RAN test, which is insignificant. On the other hand, the total score of the participants for the English hand copying test is 80, which is almost twofold of students' total score for the Dari hand copying test (47).

In addition, a paired samples T-test was conducted to compare the score of the Dari letter Rapid Automatized post-test and English letter Rapid Automatized post-test by the participants after participating in letter learning

sessions. The result of the test showed that there was not a significant difference between the Dari letter Rapid Automatized naming test ( $M=4.00$ ,  $SD=1.53$ ) and English letter Rapid Automatized naming test ( $M=3.83$ ,  $SD=1.52$ );  $t(22) = .518$ ,  $p > 0.05$  (Table 3).

Table 2. Results of the participants' posttest

| Participant No | D.L.RAN.T | E.L.RAN.T | D.L.HC.T | E.L.HC.T |
|----------------|-----------|-----------|----------|----------|
| 1              | 5         | 4         | 0        | 3        |
| 2              | 4         | 2         | 2        | 5        |
| 3              | 3         | 4         | 9        | 10       |
| 4              | 4         | 5         | 3        | 5        |
| 5              | 8         | 7         | 4        | 6        |
| 6              | 3         | 3         | 5        | 5        |
| 7              | 3         | 2         | 4        | 7        |
| 8              | 5         | 6         | 5        | 10       |
| 9              | 4         | 3         | 3        | 7        |
| 10             | 3         | 4         | 6        | 10       |
| 11             | 4         | 3         | 4        | 8        |
| 12             | 2         | 3         | 2        | 4        |
| Total          | 48        | 46        | 47       | 80       |

\*D.L.RAN.T = Dari Letter Rapid Automatized Naming Test

\*E.L.RAN.T = English Letter Rapid Automatized Naming Test

\*D.L.HC.T = Dari Letter Hand Copying Test

\*E.L.HC.T = English Letter Hand Copying Test

Table 3. Paired samples t-test results of Dari and English letters RAN test

| Pair 1 | RAN                 | Paired Differences |                |                 | t     | df | Sig. (2-tailed) |
|--------|---------------------|--------------------|----------------|-----------------|-------|----|-----------------|
|        |                     | Mean               | Std. Deviation | Std. Error Mean |       |    |                 |
|        | DL.RAN.T - EL.RAN.T | 0.167              | 1.115          | 0.322           | 0.518 | 11 | 0.615           |

\*DL.RAN.T = Dari Letter Rapid Automatized Naming Test  
\*EL.RAN.T = English Letter Rapid Automatized Naming Test

Table 4. Paired samples T-test results of Dari and English letters hand copying test

| Pair 2 | Hand Copying        | Paired Differences |                |                 | t      | df | Sig. (2-tailed) |
|--------|---------------------|--------------------|----------------|-----------------|--------|----|-----------------|
|        |                     | Mean               | Std. Deviation | Std. Error Mean |        |    |                 |
|        | D.L.HC.T - E.L.HC.T | 2.75               | 1.422          | 0.411           | -6.698 | 11 | .000            |

Furthermore, the author conducted paired samples T-tests to determine the differences between the participants regarding Dari and English hand copying. The results showed that there was a significant difference between the Dari letter hand copying test ( $M=3.92$ ,  $SD=2.27$ ) and the English letter hand copying test ( $M=6.67$ ,  $SD=2.42$ ) conditions;  $t(11) = -6.69$ ,  $p < 0.05$  (Table 4).

#### 4. Discussion

The study investigated preschool children's ability to recognize alphabet letters and hand-copying skills in two different languages, English and Dari – only uppercase letters were selected for the English alphabet. In other words, it compared the difficulty level of English and Dari alphabet letter learning among preschoolers in Afghanistan. The results of the study showed that there was not a significant difference in the recognition of Dari and English alphabet letters by preschool children.

Despite the Dari alphabet letter shapes look more complicated than English alphabet letters since there are several diacritics for a single letter, e.g., /ش/ which has three dots on its top, some are curved like /چ/ or some have

extra parts such as /ڪ/, the participants could recognize both languages alphabet letters almost equally. Therefore, this study suggests that preschoolers learn letter recognition of any alphabet letters equally regardless of their shapes, provided that equal teaching time is delivered for them.

Contrary to letter recognition results, the finding of the research suggested that there was a significant difference in the hand-copying test. The participants could copy the English alphabet letters more quickly and easily than the Dari alphabet. The reason for this can be the difficult shapes of the Dari alphabet letters. It was observed that the participants needed more time to copy the Dari alphabet letters than the English alphabet letters. Therefore, Dari letters require more concentration for children while being hand-copied. The study's results suggest that the more complex the alphabet letters are, the more difficult and time-consuming they will get for children. From this perspective, this study conforms with Dunn-Rankin's (1990) study, in which some letters are introduced as requiring a longer fixation time. The study also showed that there was not a significant difference between female and male preschoolers. This finding is inconsistent with Berninger & Fuller's (1992) and Puranik et al. (2013), whose study showed that girls achieved higher letter-writing scores than boys.

## 5. Conclusion

This study compared the difficulty level of alphabet letter recognition and hand-copying skills among children between two languages, English and Dari alphabet letters. The findings of the study suggested that there was a significant difference in hand copying tests. In other words, the participants could hand copy more English alphabet letters than Dari alphabet letters. In terms of letter recognition, the results of this study displayed that the participants recognized the alphabet letters in Dari and English almost equally. It can be concluded that the shapes and forms of the letters played a significant role in hand copying the alphabet letters, the more complicated the shapes and forms, the more complex the hand copying. However, the shapes and forms of letters did not impact the letter recognition. Since the present study compared English uppercase letters to Dari alphabet letters, comparing English lowercase letters to Dari alphabet letters, whether they act similarly or differently, remains an area requiring further research.

### 5.1. Implications

The study has implications for English instructors teaching English, mainly writing, to Dari-speaking children. They should understand that the English alphabet system and the Dari alphabet system are disparate. Comparing English alphabet letters to Dari alphabet letters should be avoided when teaching the English alphabet to Dari speakers. They should provide their students with more activities to help them learn English alphabet letters without comparing them to Dari letters. It also has implications for Dari instructors, teaching Dari to speakers of other languages, mainly English. They should understand that Dari, like Arabic, has a unique alphabet system whose letters have particular shapes and diacritics, which makes it hard for speakers of other languages to learn them. Therefore, they should use effective techniques to help students learn Dari letters. They should provide them with various writing activities to help them learn how to write the Dari alphabet letters.

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### **Author contribution statements**

The authors contributed equally to the research design and implementation, analysis, and the manuscript's writing.

### **Disclosure statement**

The authors reported no potential competing interest.

### **Ethics committee approval**

This research has ethics committee approval from Takhar University with a 13/01/2021 date and 342 number. All responsibility belongs to the researchers. All parties were involved in the research of their own free will.