

NEW APPROACHES IN EDUCATIONAL SCIENCES: THEORY, METHOD, AND PRACTICE

Editor: Prof. Dr. Fethi KAYALAR



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Chapter 1

Semantic Mapping Through Word Clouds of 2025 New York City Mayoral Debates with Implications for Political Literacy*

Teslime Defne YILDIZ¹, Buğra ZENGİN²

Abstract

The integration of 21st-century skills with language skills in curriculum frameworks is a recent innovative phenomenon. The 21st Century Skills Map is specifically designed for world languages in the USA. On the other hand, the Cambridge Framework for Life Competencies in the UK position English Language Teaching as an environment to embed broader life skills alongside linguistic competence models. However, both frameworks lack specific emphasis on political literacy, a subject of high relevance to learners with art of persuasive rhetoric and policy content. Consequently, the integration of political literacy consciousness-raising content from US election rhetoric would be a promising approach in terms of dual learning outcomes as components of the whole picture: Communicative effectiveness and efficiency through persuasive political rhetoric which can serve as a model as well as policy content relevant to peoples' lives.

Introduction

The reference to 21st century skills is pervasive in vision and mission statements of educational institutions around the world. This is a reflection of arguments against the academic subject instruction in isolation. On the contrary, they make it crystal clear that implementation of curriculum frameworks is likely to pay off as promising approaches. The examples which outstand in terms of integrating 21st skills into core subject are The Partnership for 21st century Skills in the USA (2009), the language-specific p21 skills map for core subject of world languages in the USA (2011) and classroom-focused and language-centered Cambridge Life Competencies

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*This book chapter is the revised and expanded version of the paper presented at the 4th International Congress on Academic Studies in Philology - Digitalisation in Humanities

Framework (CLFC) (2019) in the U.K, which embed transferable life skills into language learning (especially English) and beyond.

The Partnership for 21st century Skills

A national organization in USA, the Partnership for 21st Century Skills “advocates for the integration of skills such as critical thinking, problem solving and communication into the teaching of core academic subjects such as English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics” (P21 Framework Definitions, 2009, p.9). In order to help practitioners with this integration a unified, collective vision for learning has been developed by the Partnership. Known as the Framework for 21st Century Learning, which blends content knowledge, specific skills, expertise and literacies, this vision aims to motivate schools in the promotion of the understanding of academic content at much higher levels with 21st century interdisciplinary themes woven into core subjects. Accordingly, skills essential for successful life and work should be learned within the context of core knowledge teaching. The core subjects listed are English, reading or language arts, World languages, Arts, Mathematics, Economics, Science, Geography, History as well as Government and Civics. The themes referred to are global awareness, financial, economic, business and entrepreneurial literacy, civic literacy, health literacy, and environmental literacy.

The macro-level, broad, cross-disciplinary and policy oriented p21 framework can be designed specifically for core subjects. For instance, with respect to World Languages, the Partnership has forged alliances with the key national organization that represents the core subject of World Languages in USA, the American Council on the Teaching of Foreign Languages (ACTFL). The yearlong collaborative process has resulted in 21st century skills map issued for the core subject. Resulting from “hundreds of hours of research, development and feedback from educators and business leaders across the nation” the map “provides educators, administrators and policymakers with concrete examples” of a successful integration (21st Century Skills Map, 2011, p.1). The subheadings in this map are information, media and technology skills as well as life and career skills. The first includes communication, collaboration, critical thinking and problem solving, creativity and innovation, as well as information literacy, media literacy and technology literacy. The second includes flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility.

The five goals undergirding the national standards focus language learning on 5Cs (communication, cultures, connections, comparisons, and communities). The first C (communication) is the capacity to exchange and interpret messages through the real-world modes of interaction (interpersonal, interpretive and presentational modes) mirroring the ways communication naturally occur in real life. The second C

(cultures) is raising the learners' awareness of the inseparability of language and culture for them to gain insights into target language speakers' lives exploring cultural products and practices and connecting these to the underlying perspectives of the community. The focus on the third C (connections) is learners' use of target language as a bridge to access knowledge in other subject areas. Concepts already learned in different disciplines are reinforced in their meaningful applications in language classrooms. They gain insight into their own language and culture through engagement with a new language and culture in the fourth C (comparisons). With fifth C (communities), language learning becomes more relevant to the learners upon their recognition of its value beyond school. Using modern communication technologies can provide authentic opportunities to use language out of class settings of the wider world.

Cambridge Life Competencies Framework (CLCF)

Another framework aiming to integrate language learning with broader 21st century skills is Cambridge Life Competencies Framework (CLCF). Although there are differences with respect to scope, structure, and pedagogical emphasis, there is significant alignment, which reflects in the six competencies of CLCF, which are creative thinking, critical thinking, learning to learn, communication, collaboration and social responsibilities. As the 21st century interdisciplinary themes are woven into p21 core subjects, the foundational layers of emotional development, digital literacy and discipline knowledge weave through all of the skills grouped into the six competencies of CLCF (Cambridge University Press, 2019).

Some of the overlaps can also be detected regarding the 5Cs of the p21 skills map. Communication (p21) aligns with communication competency (CLCF) and also collaboration (CLCF) in that interactions are facilitated and breakdowns are overcome. The other alignment is between cultures (p21) and the social responsibilities competency (CLCF), which encompasses intercultural awareness and understanding global issues. Taking multiplicity of perspectives into account, this can be linked to critical thinking as well. The overlap can also be noticed between connections (p21) and learning to learn (CLCF). With learning to learn competency (CLCF), learners use strategies to connect knowledge and manage information. The ties to critical thinking can also be noticed considering the learners' identification of links and relationships. With respect to comparisons (p21), both critical thinking and creative thinking competencies overlap given that the former involves evaluation of ideas, recognition of patterns, as well as drawing inferences and the latter encompasses multiplicity of perspectives considered as well as imagining alternative. Another overlap is between communities (p21) overlaps with CLCF's collaboration competency (diversity of teams and task sharing) and social responsibilities competency (roles in society understood and global issues engaged with).

Explicit reference to collaborative nature of language classroom in CLCF (2019, p.2) demonstrate social collaboration emphasis: “ understand that the engaging and collaborative nature of the language classroom is the perfect place to develop and embed these key qualities, and so our framework provides guidance on how this can be achieved.” (Cambridge University Press, 2019, p. 2). Verbatim quotes such as “the growing need to work together with people from around the world” and maintenance of “a positive mindset in an increasingly complex world” reflect intercultural awareness and emotional resilience respectively (Cambridge University Press, 2019, p. 2). “Intercultural competencies are crucial when collaborating effectively with people in different contexts to solve shared problems” (Guillén-Yparrea & Ramírez-Montoya, 2023, p. 1).

P21 (2009) has civics as a core subject and civic literacy as a 21st interdisciplinary theme to be woven to the core subject. Both p21 (2011) and CLFC (2019) have components conceptually overlapping political literacy. On the other hand, both lack specific emphasis on political literacy which is of high relevance to learners. Therefore, integrating political literacy awareness raising content into the teaching/learning of English to speakers of languages other than English could be promising in terms of dual learning outcomes (communicative effectiveness through persuasive political rhetoric and understanding of insightful policy content).

In Zengin (2021), the content chosen was the first two debates of Democratic primaries in the 2020 United States presidential election. The publicly available transcripts are recommended as reading materials and semantic mapping tasks by means of word clouds to facilitate listening comprehension. Picking favorites out of the candidates’ utterances and expressing justifications for choosing them is also recommended for ELT students. Zengin, Korkmaz Tan and Mert (2023a) benefited from the natural language processing of the town hall forums of the Democratic candidates in the 2020 election. The town halls were recommended for face-to face interactions with constituents. Zengin et al’s (2023b) “study presented some samples that would represent what would be generated in classroom activities with a teacher-student interactive semantic mapping strategy as a pre-reading classroom activity constructed out of word cloud lists of frequency” (Zengin et al., 2023b, p.3). Within a transdisciplinary approach, Zengin et al (2024) outstanced with utilization of Natural Language Processing in the analyses of transcripts from five 2024 GOP (Republican) Presidential primary debates as a rich source of persuasive rhetoric and policy content for language learners.

Aim of the study

These studies are attempts to build on the legacies of innovative frameworks implemented, do critical appraisals and make up for what is missing. However, the series lack mayoral election rhetoric. Therefore, seizing the New York City mayoral election as an opportunity this study aimed to find out if and how this local rhetoric would benefit in terms of TESOL pedagogy and political literacy.

Methodology

Transcripts from the 2025 New York City mayoral debates were collected as the primary dataset. The transcripts were archived with information about speakers, dates, and debate contexts. Each of the four 2025 NYC debate transcripts was processed by means of WordClouds, an online lexical analysis tool to obtain a list of individual words and their frequencies. The web-based tool WordClouds (wordclouds.com), which includes a built-in text parser, automatically processes the pasted input. The parser automatically breaks down the text into individual words for both high frequency list and visuals. Since the parser automatically counts how often each individual word appears. It determines the size of the word in the cloud. Stop words are retained. The resulting word lists are exported in CSV format and used for further qualitative/quantitative analysis. The frequent words were grouped into conceptual clusters representing recurring themes such as economy, safety, housing, and education. Thematic maps were prepared to illustrate how words related semantically.

The word clouds visually emphasized the prominence of community-based issues, confirming that the rhetoric of local politics aligns with universal concerns. These findings were interpreted through the lens of Content Based Instruction to show how political discourse can be transformed into communicative classroom materials.

Findings

The four 2025 New York City mayoral debate transcripts revealed a robust and evolving discourse centred on local people's issues. The following section details the prominent thematic clusters identified through word frequency analysis for each debate, highlighting both consistent priorities and shifting emphases throughout the election cycle.

June 4, 2025, First NYC Mayoral Debate (9 Candidates)

PEOPLE & COMMUNITY

City (207), York (88), People (50), Yorkers (39), Public (30), Families (10), Community (10), Voters (10), Wife (9), Family (8), Local (7), Women (7), Gentlemen

(6), Parents (6), Yorker (6), Young (6), Nation (5), National (4), Black (4), Folks (4), Mom (4), Neighborhood (4), Son (5), Men (3), Residents (3), Woman (3), Neighbors (2), Citizens (2), Civil (2), Dad (2), Daughter (2), Cities (3)

SECURITY & LAW

Police (44), Immigrants (21), Safe (19), Safety (19), Defund (16), Bail (17), Fight (17), Protect (15), Crisis (15), Laws (12), Law (11), Deaths (10), Antisemitism (10), Federal (8), Justice (9), NYPD (9), Corruption (7), Harassment (7), Race (7), Theft (7), Attack (6), Crime (6), Crimes (6), Criminal (6), Court (6), Cops (5), Arrested (4), Attorney (4), Jail (4), Lawyers (4), Legal (4), Rules (4), Shoplifters (4), Shoplifting (4), Sue (4), Trust (4), Immigrant (4), Anti-blackness (3), Corporation (3), Corporations (3), Courts (3), Democracy (3), Deportation (3), Illegal (3), Arresting (2), Gun (2), Death (2), Corrupt (2), Harassed (2), Detained (2), Harm (2), Terror (2), Deport (2), Deported (2), Enact (1), Knife (1)

GOVERNANCE & LEADERSHIP

Administration (24), Council (21), Governor (16), Leadership (14), Reform (18), Care (14), Management (6), Deputy (6), Senator (6), Leaders (5), Legislation (4), Assemblyman (4), Authority (3), Amendment (2), Bureaucracy (2), Leader (2), Leading (2), Legitimate (2), Managed (2), Manager (2), Governance (2), Legislature (1)

HOUSING

Housing (57), Home (26), Homes (22), House (10), Rent (10), Homeless (7), Homelessness (5), Apartment (4), Landlords (3), Rents (3), Rental (2), Tenants (1)

ECONOMY

Exported (42), Affordable (26), Workers (19), Pay (17), Funding (14), Money (13), Working (10), Tax (11), Budget (9), Taxes (9), Finance (8), Income (8), Jobs (8), Food (7), Fund (7), Job (7), Labor (6), Lead (6), Liar (6), Affordability (6), Opportunities (5), Economy (5), Bill (5), Billionaires (5), Businesses (4), Business (3), Cost (4), Costs (3), Debt (4), Hire (4), Investigation (4), Producing (4), Rent-stabilized (4), Spending (4), Taxpayer (4), Workforce (4), Working-class (4), Bills (4), Accountability (3), Bank (3), Commissioner (3), Cooperation (3), Endorsed (3), Fees (3), Mortgage (3), Pocket (3), Wage (3), Vacancies (3), Worker (3), Funded (3), Funds (2), Taxing (2), Taxpayers (2), Account (2), Afford (2), Demands (2), Dollar (2), Economic (2), Expensive (2), Financially (2),

Initiative (2), Non-profits (2), Not-for-profits (2), Profits (2), Profit (1), Profitable (1), Donation (1), Factories (1), Inflation (1), Investigating (1)

EDUCATION

School (23), Schools (23), Education (20), Children (14), Students (14), Nursing (8), Child (6), Pre-k (6), Teachers (6), Kids (5), Kid (5), University (5), College (4), After-school (3), Afterschool (3), Student (3), Campus (2), Campuses (2), University's (2), Tutoring (2),

HEALTH

Health (22), Covid (18), Hospital (7), Hospitals (7), Healthcare (4), Illness (3), Pandemic (3), Vaccines (3), Ill (2), Asthma (2)

RELIGION

Jewish (16), Sanctuary (10), Worship (3), Jews (2), Muslim (2)

TRANSPORTATION

Subway (11), Subways (6), Taxi (1), Buses (1)

FOREIGN RELATIONS

Israel (9)

June 12, 2025, NYC Democratic Primary Final Debate (7 Candidates)

PEOPLE & COMMUNITY

City (235), People (86), Yorkers (58), State (45), Families (13), Mom (12), Community (11), Yorker (10), Couple (9), Black (9), Women (9), Voters (8), Father (7), Man (7), Family (5), Young (5), Communities (4), Generation (4), Nation (4), National (4), Neighborhoods (4), Parents (4), Residents (4), Men (4), Brother (3), Parent (3), Youth (3), Citizens (2), Daughters (2), Woman (2), Cities (4)

SECURITY & LAW

Police (30), Safe (17), Death (10), Immigrants (10), NYPD (10), Harassment (8), Attack (7), Crime (7), Attorney (6), Crisis (6), Federal (6), Legal (6), Rules (6), Troops (6), Illegal (5), Immigrant (5), Laws (5), Violations (5), Court (5), War (5), Corruption (4), Crimes (4), Justice (4), Legislature (4), Peace (3), Anti-semitic (3), Anti-semitism (3), Arrest (3), Chaos (3), Violence (3), Protecting (3), Protection (3), Deaths (3), Immigration (3), Lawyers (3), Legislative (2), Legislator (2), Attacks (2), Attorneys (2), Genocide (2), Harassed (2), Harasser (2), Killed (2), Safeguards (2), Sue (2), Corrupt (2)

GOVERNANCE & LEADERSHIP

Governor (15), Administration (12), Leadership (10), Political (8), Leader (6), Assembly (7), Managed (4), Manage (4), Leaders (3), Management (2), Manager (2), Deputy (2)

HOUSING

Housing (52), Rent (28), Homes (16), Home (14), Apartments (5), Homeless (4), Homelessness (4), Rents (3), Tenants (3)

ECONOMY

Work (33), Affordable (24), Funding (16), Dollars (16), Pay (13), Money (12), Fund (10), Workers (10), Accountability (8), Wages (8), Hire (7), Tax (7), Afford (6), Working (6), Budgets (5), Economic (5), Works (5), Taxes (5), Groceries (5), Affordability (4), Debt (4), Donors (4), Endorsement (4), Expensive (4), Bill (4), Commission (4), Food (4), Business (3), Businesses (3), Dollar (3), Employees (3), Hired (3), Invest (3), Jobs (3), Profits (3), Profit (2), Rentsabilized (3), Bank (2), Banks (2), Bills (2), Cronyism (2), Defunding (2), Opportunities (2), Paying (2)

EDUCATION

Kids (21), Education (17), School (16), College (13), Students (12), Nursing (11), Children (8), Schools (8), Teachers (8), Child (7), Kid (6), Teacher (3), Classroom (3), Student (3), Afterschool (2), Teach (2)

HEALTH

Health (12), Ill (5), Pandemic (5), Healthcare (4), Hospital (4), Illness (2)

TRANSPORTATION

Subway (8), Traffic (6), Subways (4), Buses (3), Metro (2), Taxi (2)

RELIGION

Jewish (21), Mosque (6), Muslim (6), Muslims (6), Sanctuary (3), Synagogue (2)

FOREIGN POLICY

Israel (11), Gaza (3), Israeli (3), Israelis (2), Pro-israel (2)

October 16, 2025, Three Candidates First NYC Mayoral Debate

PEOPLE & COMMUNITY

City (167), People (57), National (19), Democratic (18), Community (16), Women (15), Cities (9), Gentlemen (8), States (7), Local (6), Voters (6), Civil (5),

Men (5), Parents (5), Young (5), Communities (2), Neighbors (4), Neighborhoods (3), Residential (4), Nation (4), Yorker (4), Woman (4), Citizens (3), Families (3), Residents (3), Father (2), Mom (2), Mother (1), Family (1)

SECURITY & LAW

Police (63), Law (27), Safety (21), NYPD (16), Crisis (14), Prostitution (13), Crime (12), Justice (12), Federal (11), Violence (11), Peace (9), Cops (7), Fight (7), Legal (7), Protect (7), Investigation (7), Anti-semitic (6), Fighting (6), Migrant (6), Illegal (5), Rules (5), Safe (5), Arrested (4), Attack (4), Force (4), Kill (4), Killed (4), Migrants (4), Violent (4), Troops (4), War (4), Illegally (2), Attacks (3), Attorney (3), Chaos (3), Criminals (3), Immigration (3), Legalization (3), Legally (3), Victims (3), Violate (3), Anti-semitism (2), Attorneys (2), Battles (2), Criminal (2), Deportation (2), Judge (2), Terrorism (2), Terrorist (2), Weapons (2), Violations (2), Legalizing (2), Invested (2), Investigates (2), Investigating (2), Investigations (2), Prevention (1), Weaponization (1), Weaponizes (1)

GOVERNANCE & LEADERSHIP

Governor (37), Assemblyman (17), Political (19), Leadership (6), Leader (5), Management (5), Administration (3), Assembly (4), Assemblyman's (2), Assemblymen (2), Bureaucracy (2), Delegates (1)

HOUSING

Rent (29), Housing (20), Homeless (17), Apartments (9), Landlords (8), Home (6), Homes (6), Homelessness (5), Apartment (5), House (3)

TRANSPORTATION

Buses (20), Subways (15), Bus (11), Subway (6), Traffic (4), Trafficking (2)

ECONOMY

Taxes (19), Pay (22), Tax (17), Bill (15), Job (14), Workers (13), Budget (12), Cost (12), Income (11), Affordable (8), Commissioner (8), Dollars (8), Working (8), Costs (9), Insurance (7), Jobs (7), Affordability (6), Business (6), Defund (6), Funding (6), Accountability (5), Employees (4), Expensive (4), Hire (4), Businesses (4), Funds (4), Billionaire (3), Cheaper (3), Economy (3), Market (3), Wealth (3), Working-class (3), Learning (6), Groceries (3), Debt (2), Fees (2), Finance (2), Mortgage (2), Pockets (2), Price (2), Procurement (2), Salary (2), Worker (2), Eggs (2), Workingclass (1), paying (2), Pay check (1)

HEALTH

Health (18), Immunity (6), Covid (3), Pandemic (3)

EDUCATION

Schools (18), Children (17), Teachers (12), School (11), Students (11), Learning (6), Nursing (4), Classroom (3), Student (3), Curriculum (2), Dyslexia (2), Educators (2), Kids (2), Kindergarten (2), Kindergartens (2), Teach (2), Teaching (2)

RELIGION

Jewish (14), Muslim (10), Jews (6), Muslims (4), Mosque (4), Synagogue (2)

FOREIGN RELATIONS

Israel (6), Israeli (3), Israelis (2)

October 22, 2025, Three Candidates Final NYC Mayoral Debate

PEOPLE & COMMUNITY

City (130), York (71), People (50), Yorkers (46), State (33), Public (22), Community (13), Family (9), Country (8), Women (8), City's (6), Person (6), Man (5), Populations (4), Sons (4), Families (3), Gay (3), Men (3), Mom (3), Neighborhoods (3), Voters (3), Young (3), Adult (2), Friend (2), Friends (2), Gentlemen (2), Juveniles (2), Neighborhood (2), Parents (2), Son (2), Yorker (5), States (5), Cities (2), Citizens (2), Communities (1), Daughter (1), Mothers (1), National (1), York's (1)

HOUSING

Rent (25), Homeless (19), Housing (28), Landlords (14), Apartments (9), Home (7), Tenants (6), Tenant (5), House (3), Homelessness (2), Homes (2), Houses (2), Apartment (2), Landlord (2), Residential (2), Landlord's (1), Rental (1), Renters (1), Rents (1)

SECURITY & LAW

Law (32), Police (25), Safety (14), Crime (13), NYPD (11), Control (10), Fight (9), Court (8), Fair (8), Bail (7), Crimes (7), Cops (6), Criminal (6), Dangerous (6), Enforcement (6), Jails (6), Shelters (6), Case (5), Cases (5), Course (5), Force (5), Issues (5), Legislature (5), Nuclear (5), Adversaries (5), Anti-semitism (4), Inmates (4), Jail (4), Kill (4), Legislation (4), Save (4), Amendment (3), Arrested (3), Attorney (3), Ban (3), Contracts (3), Corruption (3), Deals (3), Harassment (3), Justify (3), Legally (3), Rules (3), War (3),

Accused (2), Criminals (2), Decriminalize (2), Disorder (2), Gang (2), Justice (2), Killed (2), Laws (2), Legal (2), Litigated (2), Penalties (2), Pimps (2), Pledge (2), Prostitution (2), Prosecute (2), Prosecuting (2), Protections (2), Rebuttal (2), Shelter (2), Violent (2), Arrests (2), Anti-Semitic (1), Arresting (1), Chaos (1), Corrupt (1), Deportation (1), Dies (1), Enemies (1), Eviction (1), Illegal (1), Immigration (1), Jurisdiction (1), Patrolled (1), Weaponizes (1), Rebuttals (1)

GOVERNANCE & LEADERSHIP

Government (22), Governor (17), Administration (9), Political (7), Council (6), Care (6), Policies (5), Politics (5), Policy (5), Opponents (4), Opponent (2), Assembly (3), Deputy (3), Leader (3), Leaders (3), Manage (3), Managed (3), Negotiate (3), Authority (2), Bureaucracy (2), Reform (2), Administers (1), Authorities (1), Politician (1), Well-managed (1)

ECONOMY

Affordable (18), Pay (17), Work (17), Tax (13), Budget (12), Cost (10), Bill (8), Funding (8), Hire (8), Money (8), Cash (7), Commissioner (7), Jobs (6), Needs (6), Workers (6), Costs (5), Dollars (5), Misdemeanors (5), Sector (5), Stabilized (5), Vendors (5), Afford (8), Affordability (4), Taxes (4), Business (4), Businesses (4), Funds (4), Job (4), Wage (4), Accountability (3), Accountable (3), Defund (3), Employee (3), Fees (3), Income (3), Market (3), Property (3), Rentstabilized (3), Spend (3), Vacancy (3), Taxpayer (2), Taxpayers (2), Allocated (2), Bills (2), Budgets (2), Economic (2), Economy (2), Finance (2), Grocery (2), Insurance (2), Marketplace (2), Opportunity (2), Poor (2), Salary (2), Selling (2), Bank (1), Consumer (1), Counterfeit (1), Forprofits (1), Fundraising (1), Indigent (1), Inflation (1), Profits (1)

EDUCATION

School (23), Children (14), Education (11), Students (8), Teachers (7), Class (6), Kids (4), College (3), Child (4), Kid (3), Schoolyard (2), Student (2), University (2), Child's (1), Curriculum (1), Study (1)

HEALTH

Health (12), Covid (3), Ill (3), Medicaid (1)

TRANSPORTATION

Subway (11), Transit (8), Subways (7), Bus (7), Buses (4), Drivers (4), Cars (3), Taxi (2), Train (2)

RELIGION

Jewish (13), Jews (2), God (2), Church (1), Synagogue (1), Synagogues (1), Temples (1)

FOREIGN RELATIONS

Uganda (5), Indian (4), Israel (4), Gaza (2), Globe (2), Global (2), Jihad (2), Netanyahu (2), Israeli (1), Palestine (1), Tokyo (1)

The 2025 NYC mayoral debates offer authentic, thematic content ideal for Content-Based Instruction. Their focus on universal issues like housing and safety provides a meaningful context for students to learn vocabulary through semantic mapping and analyze political rhetoric. Using this foreign political context allows learners to develop language skills and critical thinking in a safe, objective space, fostering both linguistic and civic competence.

Conclusion

The results of this study demonstrate significant similarities with those in Zengin (2021), (Zengin et al, 2023, 2024) in that relevant policy content expressed in cognitively, socially and emotionally effective ways of using language. The novel contribution of this study is that this time the local emphases and concrete needs in the mayoral election the rhetoric of then candidate but now the mayor-elect Zohran Kwame Mamdani whose communicative talent is outstanding. The word frequency patterns detected through wordclouds.com helped to raise questions related to the analysis of the patterning in the discourse. It was seen that the rhetoric focused on issues of the locals. The themes was worth noticing (e.g. economy, safety, housing and education) as real people's issues.

The idea of using efficient and effective selections of rhetoric in United States election processes is recommended since it is highly likely to come across persuasive language use which also contains relevance to the nonnative speakers of English as well. The choice being the US election is strategically safe space for those who might shy away from a civic engagement that would result in political literacy. Rivers et al (2018, p.10) point out the importance “for students to have spaces to understand, explore and debate political messages and for teachers to feel confident and able to engage with those campaign messages especially where they may be controversial, partisan or challenging” (Rivers, Carragher, Couzens, Hechler, & Fini, 2018, p.10).

The use of rhetoric of N.Y.C. mayoral election debates can be efficiently used within a content-based instruction approach. The three main features Content-Based Instruction is based on are listed by (Steinberg & Sciarini, 2006). Language teaching is based on texts and discourse. Since real world language skills

(comprehension/production; reading/writing) are intertwined several skills should be mastered together. The third feature is that language is assumed to be purposeful. "People learn a second language more successfully when they use this language to get information, which is interesting, useful and leads to a desired goal" (Steinberg & Sciarini, 2006, p.155). Both English language teaching practice and the content aimed to be used in this practice are intertwined. Therefore, the content to be chosen is supposed to benefit, motivate, and engage the learner. In other words, the relevance of the content is key to its potential to be a fruitful solid base for English language teaching practice to establish and advance.

Due to the relevant content, semantic mapping activities can be implemented with tasks. Engagement in meaningful activities stimulating communication and regulating information input and output. Besides, the typical use authentic materials (e.g. transcripts of real debates) results in improvement of learning motivation and promotion of learning. These features are what Steinberg and Sciarini (2006, p. 157) refer to assumptions of task-based instruction. To illustrate examples from the relevant research the following would serve:

Al-Otaibi (2016) states that computer-assisted semantic mapping paid off for the nursing students' medical vocabulary necessary for the comprehension of medical texts. Khoii and Sharififar (2013) compared rote memorization and semantic mapping applied in intermediate English learners and found no significant superiority between the two strategies, but they acknowledged the value of elaborative learning. El Koumy (1999) examined three types of semantic mapping as teacher-initiated, student-mediated, and teacher-student and concluded that teacher student interactive mapping was the most effective for improving reading comprehension of 187 freshmen at an Egyptian university.

Besides language teaching ideas recommend the broader implications of the study is political literacy, which provides the learners with the consciousness to discern the difference between policy/policies and politics, make educated decisions about the political world around them, to defend themselves against manipulative rhetoric, and to gain insight into the emotions, which is key to efficient interaction. The choice of mayoral debate rhetoric has great potential in that all politics is local, a phrase commonly used in American politics, but the content conveys universal implications to reach global relevance effect.

Combining word cloud analysis with semantic mapping provides a practical model for applying Content Based Instruction to the teaching of English within the content of political literacy. Since the political literacy gives relevant themes regarding with the learning of English, it increases language learners' engagement, motivation, and communicative effectiveness. For teachers, this

approach offers a replicable model that joins computational tools with interactive classroom practices. For researchers, it demonstrates how digital text analysis can inform applied linguistics. To sum up, the debates provide a thematically coherent, authentic corpus for CBI, effectively bridging language learning and political literacy in a safe, engaging context.

The publicly available and free to use software used is an advantage, but the study was limited to individual words not N-Grams. Future research can integrate natural language processing and semantic analysis to explore emotional and ideological dimensions of political discourse and their implications for language education. Computational social science should be encouraged motivating the transdisciplinary nature of applied linguistics in its larger sense.

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Chapter 2

Vom Heftroman zu Netflix: Trivilliteratur im medialen Wandel

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Literatur zwischen Kunstanspruch und Massenkonsum

In der literaturwissenschaftlichen Diskussion spielt die begriffliche Unterscheidung zwischen kanonisierten und populären Textformen eine zentrale Rolle. Besonders der Terminus „Trivilliteratur“ hat sich dabei als ein vielschichtiges und zugleich umstrittenes Konzept erwiesen, da er nicht nur historische Bedeutungsverschiebungen widerspiegelt, sondern auch normative Wertungen transportiert (Başaran, 2025a). Dabei greift eine rein literaturhistorische Betrachtung zu kurz, da sich das Phänomen längst von seinem ursprünglichen Trägermedium – dem gedruckten Buch oder Heft – emanzipiert hat. Die Trivilliteratur zeichnet sich durch eine bemerkenswerte mediale Anpassungsfähigkeit aus. Die schematischen Erzählmuster, die einst den Kolportageroman prägten, finden sich heute in audiovisuellen Formaten und digitalen Plattformen wieder. Diese mediale Transformation verdeutlicht, dass das Triviale nicht an eine bestimmte Technologie gebunden ist, sondern eine intermediale Konstante moderner Unterhaltungskultur darstellt.

Um dieses Phänomen heute richtig zu verstehen erscheint es notwendig, den Begriff sowohl etymologisch als auch diskursgeschichtlich zu betrachten, um seine heutige Verwendung und die damit verbundenen Problemlagen adäquat einordnen zu können. Diese Unterscheidung ist oft weniger eine Frage der literarischen Qualität als vielmehr eine Frage der gesellschaftlichen Macht „Wer darf bestimmen, was gute Literatur ist?“

Begriffsbestimmung und Begriffsproblematik

Der Ausdruck „Trivilliteratur“, dessen Verwendung seit der Mitte des 19. Jahrhunderts nachweisbar ist, leitet sich vom lateinischen *trivialis* ab, das ursprünglich im Sinne von „allgemein zugänglich“ oder „für jedermann verständlich“ gebraucht wurde, zugleich jedoch auch Bedeutungsnuancen wie „gewöhnlich“ und „alltäglich“ einschloss (vgl. Nusser, 1991). In der modernen

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literaturwissenschaftlichen Terminologie hat der Begriff jedoch eine deutlich abwertende Bedeutung erfahren. Er fungiert mittlerweile häufig als Sammelbezeichnung für als „banal“, „kitschig“ oder „geschmacklos“ eingestufte Texte und gilt daher als ideologisch aufgeladen und in hohem Maße wertend, was verschiedentlich Kritik an seiner wissenschaftlichen Verwendbarkeit – und auch an seiner Eignung für strukturierte Lehrwerke – hervorgerufen hat (Sarkiler, 2025a; Teuscher, 1999).

Laut Teuscher (1999) hat Helmut Kreuzer schon im Jahr 1967 betont, dass die Unterscheidung zwischen Trivial- und Hochliteratur kein objektives Kriterium sei, sondern auf gesellschaftlich geprägten Vorstellungen von Geschmack basiere. Die literaturwissenschaftliche Praxis, Werke anhand dieses Begriffs pauschal zu bewerten, verstellt dabei häufig den Blick auf ihre konkreten Funktionen und historischen Kontexte.

Begriffsalternativen und Kategorisierungsprobleme

In der Forschung existiert eine Vielzahl an Synonymen und konkurrierenden Begriffen wie Unterhaltungsliteratur (Teuscher, 1999), Schemaliteratur (Teuscher, 1999), Gebrauchsliteratur (Burger, 1968), Massenliteratur (Kaes & Zimmermann, 1975) (Zimmermann, 1976), populäre Lesestoffe (Nusser, 1991), Kitsch (Teuscher, 1999) oder Schund (Burger, 1968). Diese Vielfalt verweist auf die terminologische Unsicherheit und methodische Schwierigkeit, einheitliche Kriterien zur Definition dieses Phänomens zu finden.

Hans Dieter Zimmermann schlägt den Begriff „Schemaliteratur“ vor, um sich von der abwertenden Bedeutung des Ausdrucks „Trivialliteratur“ zu distanzieren und gleichzeitig die häufig wiederkehrenden, formelhaften Strukturmerkmale solcher Texte präziser zu beschreiben (vgl. Teuscher, 1999). Teuscher (1999) spricht sich dafür aus, den traditionellen Begriff zu ersetzen und stattdessen eine differenziertere Terminologie zu verwenden – etwa „Unterhaltungsliteratur“ oder allgemein „nicht-standardisierte Literaturformen“ –, um verschiedenen Texttypen gerechter zu werden.

Diese Diskussionen machen deutlich, dass viele literarische Bewertungen eher von kulturellen Vorstellungen als von den Texten selbst geprägt sind. Eine weniger wertende und präzisere Begriffswahl kann dazu beitragen, populäre Literaturformen angemessen zu beschreiben und ihren tatsächlichen Stellenwert im kulturellen Leben sichtbar zu machen.

Funktionale Perspektiven

Aus funktionaler Sicht wird Trivialliteratur zunehmend nicht mehr nach ästhetischen Maßstäben, sondern nach ihrer gesellschaftlichen Wirkung und kulturellen Funktion beurteilt. In dieser Hinsicht verweist die Forschung etwa auf ihre Funktion als Identitätsangebot, als Realitätsflucht oder als emotionales Regulationselement im Alltag (Sarkiler, 2025b; Zimmermann, 1976). Die Frankfurter Schule kritisierte die Trivialliteratur als Bestandteil der „Kulturindustrie“, Kritiker wie Adorno sahen darin eine Gefahr. Sie argumentierten, dass diese standardisierte Kulturindustrie die Menschen passiv macht und bestehende Machtverhältnisse zementiert (vgl. Nutz, 1999). Man kann dies als „psychologische Entlastung“ sehen. In einer komplexen Welt sehnt sich der Leser nach einer Geschichte, in der Gut und Böse klar getrennt sind und Probleme am Ende gelöst werden.

Typische Merkmale der Trivialliteratur

Trivialliteratur lässt sich weniger über klare inhaltliche Kriterien als vielmehr über formale, strukturelle und funktionale Merkmale bestimmen. Trotz ihrer Vielfalt an Gattungen und Themen weisen Werke der Trivialliteratur gewisse wiederkehrende Charakteristika auf, die eine systematische Erfassung ermöglichen. Auf Grundlage der vergleichenden Betrachtungen von Teuscher (1999) zu den Heftserien *Jerry Cotton* und *Perry Rhodan* sowie den Romanen von Johannes Mario Simmel lassen sich zentrale Merkmale der Trivialliteratur herausarbeiten.

Schematisierte Handlungsmuster

Ein zentrales Merkmal trivialer Erzähltexte ist ihr schematischer Aufbau. Handlungsverläufe folgen in der Regel einem festen dramaturgischen Muster mit klarer Einleitung, Konfliktentwicklung, Höhepunkt und Auflösung. Überraschende Wendungen oder narrative Brüche finden kaum statt. Statt zu überraschen, sind die Werke darauf ausgelegt, bestehende Erwartungen zu bedienen und Vertrautheit zu schaffen. Beispielhaft ist dies in *Jerry Cotton* zu beobachten. Die Handlung läuft stets auf die Auflösung eines Kriminalfalls hinaus, wobei der Protagonist nie scheitert und stets als moralisch integre Figur auftritt (vgl. Nutz, 1999). Die Wiederholung der Struktur erzeugt ein hohes Maß an Vertrautheit, das zur Festigung der Lesegewohnheiten beiträgt.

Stereotype Figuren

Auch auf der Ebene der Figuren zeigt sich eine starke Tendenz zur Typisierung. Charaktere sind oft eindimensional angelegt indem Helden mutig, ehrlich und selbstlos, während Bösewichte unmissverständlich als korrupt oder gefährlich

gekennzeichnet sind. Psychologische Tiefenzeichnung fehlt weitgehend. Diese Typisierung lässt sich auch psychoanalytisch deuten. So fungieren Figuren in modernen Epen wie Game of Thrones oft als Repräsentanten freudscher Instanzen (Es, Ich, Über-Ich), was dem Publikum ermöglicht, unterdrückte Triebe in einem sicheren fiktionalen Rahmen auszuleben (vgl. Övür, 2019).

Einfache Sprache und hohe Verständlichkeit

Trivalliteratur bedient sich einer betont einfachen Sprache, die auf komplexe Satzstrukturen und bildhafte Metaphorik weitgehend verzichtet. Dialoge sind häufig und stilistisch schlicht; die Syntax ist überwiegend parataktisch (Aneinanderreihung von Hauptsätzen), der Wortschatz alltagssprachlich. Diese sprachliche Gestaltung folgt dem Prinzip der sofortigen Dekodierbarkeit. Der Text vermeidet bewusst semantische Unschärfen, Ambivalenzen oder komplexe Symboliken, die den Lesefluss unterbrechen könnten.

Ein wesentliches Merkmal ist hierbei die hohe Redundanz. Wichtige Informationen werden oft wiederholt oder explizit ausgesprochen, sodass der Leser dem Handlungsfaden auch bei nachlassender Konzentration mühelos folgen kann. Im Gegensatz zur Hochliteratur, die oft mit „Leerstellen“ arbeitet und den Leser zur aktiven Sinnkonstruktion auffordert, ist der Trivialtext auf eine passive, widerstandsfreie Rezeption ausgelegt.

Laut Teuscher (1999) ist dies kein Mangel an sprachlicher Kompetenz seitens der Autoren, sondern Ausdruck eines funktionalen Prinzips. Die leichte Lesbarkeit soll maximale Zugänglichkeit gewährleisten – unabhängig von Bildungshintergrund oder kognitiver Tagesform der Lesenden (Başaran, 2023; Başaran, 2026; Nusser, 1991). Die Sprache fungiert hier nicht als ästhetisches Experimentierfeld, sondern als transparentes Transportmittel für Emotionen und Spannung, was ein müheloses Eintauchen in die Handlung ohne intellektuelle Barrieren ermöglicht.

Funktionalität und Wiedererkennungswert

Ein weiterer zentraler Aspekt ist die funktionale Orientierung der Texte. Trivalliteratur erfüllt konkrete Erwartungen wie Spannung, Unterhaltung, Realitätsflucht, emotionale Erregung oder moralische Bestätigung. Diese Funktionalität bedingt die Wiederverwendung bekannter Motive, Schemata und Figurenkonstellationen.

Teuscher (1999) bezeichnet dieses Phänomen als „Schema-Literatur“ in Anlehnung an Hans Dieter Zimmermann. Die Formelhaftigkeit dient dabei nicht nur der Vereinfachung des Produktionsprozesses, sondern stabilisiert auch das konsumorientierte Leseverhalten.

Affirmative Grundhaltung

Inhaltlich tendiert Trivilliteratur zu unkritischen Aussagen über bestehende gesellschaftliche Ordnungen. Autoritäten werden selten in Frage gestellt, soziale Ungleichheit selten reflektiert. Konflikte werden in der Regel nicht strukturell, sondern individuell gelöst – meist durch heroisches Handeln der Hauptfigur.

Gerade in Serien wie *Jerry Cotton* zeigt sich diese Haltung deutlich. Polizei, Staat und Rechtsordnung werden als letztlich gerecht dargestellt; Kriminalität wird individualisiert und moralisch erklärt (vgl. Nutz, 1999).

Allerdings zeigen neuere Produktionen wie *Bridgerton*, dass triviale Formate auch genutzt werden können, um moderne Diskurse über Rasse und Geschlecht in historische Kulissen zu integrieren, wenngleich dies oft kommerziell motiviert bleibt (vgl. Lynn, 2024).

Historische Entwicklung der Trivilliteratur

Die Geschichte der Trivilliteratur ist untrennbar mit dem Aufkommen und der Ausdifferenzierung moderner Massenkommunikationsmittel verbunden. Ihre historische Entwicklung verläuft dabei nicht linear, sondern reagiert dynamisch auf technologische Innovationen und soziokulturelle Umbrüche. Was mit der „Leserevolution“ und der Demokratisierung des Buchmarktes im 18. Jahrhundert seinen Anfang nahm, erfuhr durch die Industrialisierung der Drucktechnik eine massive Beschleunigung und transformierte sich im 20. Jahrhundert durch audiovisuelle Medien weiter, um schließlich im digitalen Zeitalter neue, interaktive Formen anzunehmen. Diese medienhistorische Evolution lässt sich exemplarisch in den folgenden Phasen nachvollziehen, die jeweils eigene Produktionsbedingungen und Rezeptionsmuster hervorbrachten.

Entstehung im 18. Jahrhundert

Mit der sogenannten Leserevolution des späten 18. Jahrhunderts öffnet sich der Buchmarkt zunehmend für breitere Bevölkerungsschichten (vgl. Teuscher, 1999). Die Entstehung von Leihbibliotheken, Kalendern und Volksbüchern markiert den Beginn einer breiten literarischen Produktion jenseits der höfischen und gelehrten Literatur.

Diese frühen Formen trivialer Texte dienten oft auch didaktischen oder religiösen Zwecken und waren weniger abgewertet als in späteren Jahrhunderten (vgl. Burger, 1968). Ihre schlichte Sprache und einfache Struktur richteten sich an ein noch kaum alphabetisiertes Publikum.

Entwicklung im 19. Jahrhundert

Im 19. Jahrhundert erfährt die Trivilliteratur einen gewaltigen Aufschwung durch die industrielle Buchproduktion und die Etablierung des Kolportageromans. Die massenhafte Verbreitung günstiger Heftromane erreicht nun auch ländliche und proletarische Leserschichten (vgl. Nusser, 1991).

In dieser Phase etabliert sich der abwertende Gebrauch des Begriffs „Trivilliteratur“, der eng mit bürgerlicher Kulturkritik und Ängsten vor einer Entsittlichung der Massen verknüpft ist. In dieser Phase wandelte sich die Literatur für viele von einer bloßen Unterhaltungsware zu einem zentralen Medium der Massenkommunikation, das spezifische soziale Bedürfnisse der neu entstehenden Arbeiterklasse adressierte (vgl. Kaes & Zimmermann, 1975).

Weiterentwicklung im 20. Jahrhundert

Die Rolle der Trivilliteratur im 20. Jahrhundert ist von ihrer Anpassung an neue Medien geprägt. Hörspiel, Radio, Film und später Fernsehen übernehmen viele ihrer erzählerischen Muster (vgl. Kaes & Zimmermann, 1975). Die Serienform wird dabei zum dominanten Format (vgl. Burger, 1968).

In den 1960er- und 70er-Jahren entbrannte eine intensive wissenschaftliche Diskussion, die maßgeblich von marxistischer Ideologiekritik (Horkheimer & Adorno, 1947) und kulturwissenschaftlichen Impulsen geprägt war. Während die Frankfurter Schule in der Trivilliteratur ein Instrument der kulturellen Regression sah, entwickelten jüngere Literaturwissenschaftler wie Kreuzer und Zimmermann funktionsanalytische Perspektiven (Kaes & Zimmermann, 1975; Teuscher, 1999).

Die Rückkehr des Trivialen im digitalen Zeitalter

In der Gegenwart ist Trivilliteratur längst nicht mehr nur ein Printphänomen. Digitale Medienplattformen, Streaming-Dienste, Online-Foren und soziale Netzwerke haben zur Aktualisierung trivialer Erzählformen beigetragen. Serien wie *Bridgerton* (Lynn, 2024), *Game of Thrones* (Övür, 2019) oder *Stranger Things* (Forester, 2023) bedienen sich offenkundig trivialisierter Motive wie stereotypisierte Charaktere, episodenhafte Dramaturgie, emotionale Identifikationsangebote und klare moralische Ordnungen. Dabei spielt insbesondere das Element der Nostalgie eine verkaufsfördernde Rolle. Serien wie *Stranger Things* nutzen die Ästhetik der 1980er Jahre nicht nur als Kulisse, sondern konstruieren dadurch eine kollektive Identität, die generationsübergreifend vermarktbar ist (vgl. Forester, 2023).

Diese Entwicklungen legen nahe, dass triviale Muster keineswegs überholt, sondern äußerst anschlussfähig sind – gerade unter neuen technischen, sozialen und wirtschaftlichen Bedingungen (Başaran, 2024a; Başaran, 2024b; Başaran, 2025b;

Nusser, 1991). Interessanterweise zeigt sich der Wandel vom gedruckten Heftroman zur Streaming-Serie nicht als Bruch, sondern als technologische Perfektionierung alter Prinzipien. Was im 19. und 20. Jahrhundert der Spannungsabbruch am Ende eines Groschenromans war, ist heute der „Next Episode“-Button bei Netflix. Beide Formate nutzen die episodische Erzählweise, um Kundenbindung zu erzeugen. Auch die Produktionsweise weist Parallelen auf, während Heftromane oft von anonymen Autorenkollektiven unter einem Sammelpseudonym verfasst wurden, entstehen moderne Trivialstoffe heute in sogenannten „Writers’ Rooms“. Die industrielle Fertigung von Unterhaltung, die Horkheimer und Adorno (1947) als ‚Kulturindustrie‘ kritisierten, hat sich somit von der Druckerpresse auf den Algorithmus verlagert.

Fan-Fiction, Self-Publishing und digitale Unterhaltungsliteratur

Besonders sichtbar wird die Kontinuität trivialer Erzählformen im Bereich der Fan-Fiction und das Self-Publishing. Plattformen wie *Wattpad* (Darlis, Muliastuti & Leiliyanti, 2023) ermöglichen Lesenden, selbst aktiv triviale Texte zu verfassen, zu verbreiten und kollektiv weiterzuentwickeln. Die Grenzen zwischen Produzenten und Konsument, zwischen Autor und Fan verschwimmen.

Diese neue Form der Partizipation zeigt, dass triviale Inhalte keineswegs Ausdruck passiven Konsums sein müssen, sondern auch kreative Selbstverwirklichung ermöglichen. Damit stellt sich erneut die Frage nach den Kriterien literarischer Wertung – allerdings unter veränderten kulturellen Vorzeichen. Ein entscheidender Unterschied zur klassischen Trivialliteratur ist hierbei die Interaktivität. Auf Plattformen wie *Wattpad* beeinflusst das direkte Feedback der Leser oft die Entwicklung der Handlung noch während des Schreibprozesses, wodurch die Grenze zwischen Autor und Rezipient zunehmend aufgelöst wird (vgl. Darlis et al., 2023). Hier verschwimmt die Grenze zwischen Autor und Publikum. Das „Triviale“ wird demokratisiert. Es ist nicht mehr nur ein Produkt der Industrie, sondern Teil einer partizipativen Kultur.

Wissenschaftlicher Perspektivwechsel

Lange Zeit konzentrierte sich die Germanistik vorwiegend auf den literarischen Kanon. Inzwischen erkennt sie jedoch zunehmend an, wie wichtig Populärkultur für die gesellschaftliche Vorstellungswelt, den Umgang mit Emotionen und den sozialen Zusammenhalt ist (vgl. Hecken, 2009). Triviale Formen werden nicht mehr pauschal als „niedrig“ gewertet, sondern als eigenständige kulturelle Praktiken verstanden, die in spezifischen gesellschaftlichen Kontexten Sinn produzieren.

Diese Umwertung bedeutet keine unkritische Rehabilitierung, sondern eine erkenntnisorientierte Verschiebung der Fragestellung, nicht „Was ist gute Literatur?“, sondern „Was tut Literatur, wem dient sie, und wie funktioniert sie?“ rückt ins Zentrum (vgl. Nusser, 1991).

Zusammenfassung und Ausblick

Die Auseinandersetzung mit Trivilliteratur offenbart weniger die Grenzen literarischer Qualität als vielmehr die Grenzen unseres literaturwissenschaftlichen Blicks. Die historische Entwicklung, die strukturellen Merkmale und die gesellschaftlichen Funktionen trivialer Texte zeigen, dass Trivilliteratur kein Randphänomen ist, sondern integraler Bestandteil moderner Medien- und Literaturkulturen ist. Dabei erweist sich die schematische Struktur dieser Texte nicht als Schwäche, sondern als wesentliche Voraussetzung für ihre massenmediale Verbreitung und interkulturelle Anschlussfähigkeit.

Die begriffliche Debatte um „Trivilliteratur“ hat dabei gezeigt, wie eng literarische Wertung mit sozialen, ideologischen und kulturellen Normen verknüpft ist. Ein aufgeschlossener, methodisch reflektierter Zugang, wie ihn Kreuzer, Zimmermann oder neuere medienkulturwissenschaftliche Ansätze bieten (Başaran & Sarkiler, 2025), eröffnet die Möglichkeit, triviale Erzählformen als Spiegel gesellschaftlicher Bedürfnisse, Ängste und Hoffnungen zu verstehen – nicht als „minderwertige Literatur“, sondern als funktionale und kulturell wirksame Texte. Gerade in Zeiten globaler Unsicherheit und steigender Komplexität bieten diese vertrauten Erzählmuster eine verlässliche emotionale Orientierung und Komplexitätsreduktion, die weit über bloßen Zeitvertreib hinausgeht.

Trivilliteratur ist damit kein Auslaufmodell, sondern eine literarische Form, die sich flexibel an neue Medienumgebungen, Kommunikationsformen und Rezeptionsweisen anpasst – und die vielleicht gerade deshalb eine nachhaltige Faszination auf ein „Publikum für viele“ ausübt. Die digitale Transformation und der Erfolg von Plattformen wie Wattpad oder Netflix belegen eindrücklich die Widerstandskraft des Trivialen. Somit bleibt die Populärliteratur auch im 21. Jahrhundert ein integraler Bestandteil, der den Dialog zwischen elitärer Hochkultur und gelebter Alltagskultur stetig neu herausfordert.

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Chapter 3

Those Who See What We Cannot: Discovering Untapped Potential in A Social Context

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Giriş

The fundamental goal of education systems is to discover and develop each student's talents and potential at the highest level (Tomlinson, 2022). However, in practice, especially in social studies classes, unused potential within many students may go unnoticed or insufficiently valued (Subotnik et al., 2011). This situation, by ignoring individual differences and talent diversity, leads to significant losses in both students' academic success and personal development (Plucker & Callahan, 2021). Unused potential not only hinders the achievement of equal educational opportunities but also negatively impacts the social and cultural development of society (Renzulli & Reis, 2021). In this context, the role of social studies teachers is highly critical. Teachers are responsible for recognizing students' multidimensional talents and developing appropriate pedagogical strategies to nurture these talents (Tomlinson & Imbeau, 2023). However, teachers' abilities to identify and support these talents are directly related to professional training, experience, and regulatory policies in education (Cross & Olszewski-Kubilius, 2021). Therefore, difficulties and deficiencies encountered by social studies teachers in discovering unused potential constitute a significant issue that reduces the quality of education (Plucker & Callahan, 2021).

This educational problem can be addressed in light of theoretical foundations such as inclusive education and differentiated instruction. The inclusive education approach aims to create learning environments where every student's individual needs are met and differences are regarded as assets (Moriña & Orozco, 2021). Similarly, differentiated instruction strategies provide diversified educational practices tailored to students' learning styles, interests, and academic levels, enabling each individual to unlock their potential (Tomlinson, 2014). Within the context of social studies education, models such

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as multiple intelligences theory guide the recognition and support of students' talents in various areas (Gardner, 2011).

The purpose of this research is to examine how social studies teachers recognize unused potential in students and which pedagogical strategies they employ to reveal this potential. Additionally, the effects of structural factors and policy regulations within the education system on this process are evaluated, with the aim of offering concrete suggestions for discovering potential in a societal context. The study emphasizes that revealing unused potential is not only critical for individual development but also essential for social progress, social justice, and sustainable development.

Social studies, as a subject where citizenship awareness, social values, and critical thinking skills are acquired, holds a central role in supporting students' diverse talents. This research focuses on questions such as: How do social studies teachers identify potential in students? Which pedagogical strategies are applied to unlock this potential? How do structural and policy factors within the education system affect these processes? What are teachers' professional development needs? What policy and reform recommendations can be developed for evaluating unused potential in a societal context?

In conclusion, the study suggests that uncovering unused potential in social studies education requires a multidimensional approach, and without pedagogical preparedness of teachers, systemic arrangements, and policy alignment, it cannot be fully realized. This research aims to fill the gap in this field and contribute to concrete steps supporting both individual and societal development.

Theoretical Framework And Literature Review

The inclusive education approach is based on respecting the differences of all students and organizing learning environments accordingly (Stentiford & Koutsouris, 2021). This approach necessitates considering students' cultural, cognitive, and social differences especially in social studies classes. The uncovering of unused potential is directly related to the quality of inclusive education practices. The literature emphasizes that inclusive practices increase student engagement and learning motivation, thereby contributing to the realization of their potential (Ainscow & Viola, 2024; Loreman et al., 2010). Gardner's Multiple Intelligences Theory (2011) argues that individuals possess different types of intelligences, highlighting the need for diversity and individualization in education. Social studies teachers can diversify their instructional strategies by observing students' differences in verbal-linguistic, visual-spatial, kinesthetic, interpersonal, and other intelligence areas. In this

way, students can engage in the learning process through their strengths, revealing their unused potentials (Ghaznavi et al., 2021). The literature also points out that the multiple intelligences approach is effective in developing critical thinking and problem-solving skills in social studies lessons (Aguayo et al., 2021). Differentiated instruction aims to diversify content, process, and products according to students' individual needs (Tomlinson, 2014). Social studies teachers' adoption of this approach allows consideration of diverse talents and interests among students. Teacher competencies are decisive in the effective implementation of these strategies. Professional development programs and ongoing education enhance teachers' pedagogical knowledge and skills, facilitating the discovery of unused potential (Darling-Hammond et al., 2017). Furthermore, teachers' social-emotional skills and empathy contribute to building strong relationships with students, aiding in the recognition of potential (Collie, 2022).

The discovery of unused potential in a societal context should not be limited to individual teacher practices; it must also be supported by policies and all components of the education system. Equitable educational policies, resource allocation, teacher training, and assessment systems play a critical role in creating an inclusive and potential-revealing environment (UNESCO, 2020). The literature highlights that systemic reforms and awareness-raising programs at the policy level are effective in uncovering unused potential (OECD, 2018).

Social studies teachers are in a critical position to guide students in understanding historical, cultural, and social events within a societal context while recognizing and developing individual differences (Cochran-Smith & Lytle, 2015). The literature underscores that teachers' professional awareness and pedagogical approaches are key in the process of revealing students' potentials (Darling-Hammond, 2017). Particularly, the multicultural and inclusive structure of social studies courses enables active participation of students with diverse talents and interests (Banks, 2008). Inclusive education models accept the socio-cultural, linguistic, and learning diversity of students in educational settings and reflect these differences in educational processes (Florian & Black-Hawkins, 2011). Inclusive approaches in social studies classes increase student engagement and facilitate the emergence of unused potential (Loreman et al., 2010). Differentiated instruction means diversifying lesson content, processes, and products according to students' learning styles, interests, and levels (Tomlinson, 2014). This approach allows social studies teachers to adopt a student-centered pedagogy that supports the potential of each learner. Gardner's multiple intelligences theory (2011) suggests that students may

demonstrate competencies in various intelligence domains. By embracing this theory, social studies teachers can design lessons that appeal to different intelligence areas and thereby reveal students' unused potential (Ghaznavi et al., 2021). Research shows that the multiple intelligences approach increases student motivation and learning quality (Aguayo et al., 2021). Teachers' abilities to recognize individual differences, assess them, and develop appropriate pedagogical interventions are strengthened through professional development programs (Darling-Hammond et al., 2017). Social studies teachers' professional competencies are also critically important for supporting students' socio-emotional development (Lozano-Pena et al., 2021). The literature states that continuous teacher education to improve inclusive and differentiated teaching skills positively affects the uncovering of unused potential. Educational policies emphasizing equity and fairness of opportunity improve teacher practices and educational environments (OECD, 2018). Systemic reforms contribute to the widespread adoption of inclusive and supportive approaches in social studies education, thus strengthening potential-revealing processes (UNESCO, 2020). The influence of educational policies on shaping social studies teachers' roles and pedagogical approaches is extensively examined in the literature.

Method

Research Design

This study was designed using a qualitative research method, specifically the phenomenological approach, to gain an in-depth understanding of social studies teachers' processes of recognizing unused potential and the approaches they adopt in this process. Phenomenology is considered an appropriate method for revealing the essence, meaning, and conscious reflections of individuals' lived experiences (Hirose & Creswell, 2023). Accordingly, the experiential dimensions emerging in social studies teachers' observations, perceptions, and practices were examined in detail. Thus, the study clarified how unused potential is recognized within social and educational contexts, as well as how teachers assess and guide this potential.

Study Group

The study group consisted of 15 social studies teachers working in various types of schools across different regions of Turkey. Participants were selected through purposive sampling. Selection criteria included having at least five years of experience in their field, working in diverse institutional settings such as public schools, private schools, and Science and Art Centers (SAC), and

possessing interest or experience in the recognition of unused potential. This diversity allowed for rich and comprehensive data to understand teachers' awareness of potential across different contexts.

Data Collection Tools and Procedure

The data collection tools were carefully developed to deeply understand social studies teachers' experiences and perceptions regarding the discovery of unused potential. Initially, a semi-structured interview guide was prepared in accordance with the research problems and objectives. During the development of the guide, relevant literature was reviewed, expert opinions were consulted, and questions from similar studies were analyzed. The questions were designed to cover teachers' processes of potential awareness and their practices, using open-ended formats that allowed participants to freely express themselves.

To enhance the validity of the guide, expert reviews were obtained from two social studies teachers and one special education specialist, leading to improvements in the clarity and comprehensibility of the questions. Additionally, pilot interviews were conducted with two social studies teachers. Based on feedback from the pilot phase, the final interview guide was formed. Prior to data collection, participants were contacted to schedule suitable times and locations. Most interviews were conducted face-to-face; however, online platforms were used when necessary. Each interview lasted approximately 40–60 minutes and was audio-recorded.

At the beginning of the interviews, participants were informed about the study's purpose, data confidentiality, and their rights as participants. Teachers were also asked to keep journals or field notes. This was intended to capture their observations and reflections regarding the discovery of potential over an extended period in their daily school experiences. These written records were periodically submitted to the researcher and supported by brief follow-up interviews when needed.

Data Analysis

The collected qualitative data were analyzed using descriptive and thematic analysis techniques. First, audio recordings were transcribed verbatim, and then coding commenced. During the coding process, common concepts, similar experiences, and meaning units in participants' statements were identified to form main themes and sub-themes (Braun & Clarke, 2006). This analysis systematically revealed social studies teachers' perceptions, attitudes, and practices regarding the recognition of unused potential. The results highlighted

effective strategies for discovering and evaluating potential, encountered obstacles, and facilitating factors.

Ethical Considerations

The study strictly adhered to ethical principles throughout the research process. Informed consent forms were obtained from all participants, and the study’s purpose as well as participant rights were clearly communicated. All data were anonymized and used exclusively for this research. Participants’ identities were kept confidential, and they were reminded of their right to withdraw from the study at any time. The study was conducted after obtaining the necessary approval from the ethics committee of the relevant university.

Findings

Table 1. Ways of Recognizing Potential

Sub-Themes	Interview Excerpt	WrittenDiary Excerpt	Number of Participants	Comments
Individual Observation	"A student consistently bringing different perspectives to class shows a unique way of thinking." (Teacher C)	"Today, a student’s unusual comment in the discussion caught my attention; I should focus on it."	13	Teachers recognize potential by closely monitoring students’ active participation and original thoughts during lessons.
	"The high level of some students’ questions is an important clue in revealing their potential." (Teacher J)	"During class, a student’s approach to solving a problem surprised me; it might indicate talent."		
Student Performance Analysis	"Creativity and problem-solving skills demonstrated in students’ original projects are more indicative than exam results." (Teacher B)	"I took notes on students’ original ideas in their performance reports."	11	Beyond academic success, emphasis on students’ process and project performances allows for a multi-dimensional evaluation of potential.
	"A student’s progress and attitude in the learning process is one of the most important factors in my potential assessment." (Teacher	"The improvement a student showed in the last project impressed me; potential might be emerging."		

Sub-Themes	Interview Excerpt	WrittenDiary Excerpt	Number of Participants	Comments
D)				
Student Interest and Motivation	"Students who dive deeply into subjects of interest show their enthusiasm in potential more easily." (Teacher H)	"A student is showing potential through their enthusiasm in extracurricular activities."	15	Strong motivation toward areas of interest emerges as a key determinant in teachers' observations of potential.
Social and Emotional Indicators	"Observing what students are curious about and open to questions indicated learning is critical in signs of deep identifying potential." (Teacher L)	"Today, a student's thinking."	9	Social skills and emotional intelligence stand out as other important dimensions teachers consider in potential awareness.
	"Social skills like leadership and taking responsibility play an important role in group work was noticing potential." (Teacher E)	"A student's sense of responsibility in work was striking."		
	"Empathy and teamwork ability reflect success in different areas for a student." (Teacher G)	"Positive relationships with peers might reflect their potential."		
Creativity and Problem Solving	"Students' unconventional thinking and ability to generate new solutions are important indicators of their potential." (Teacher N)	"Today, a student's alternative solution suggestions caught my attention."	7	Creativity and problem-solving skills emerge as additional areas emphasized by teachers when identifying potential.
Continuous Growth and Curiosity	"To notice potential, a student's ongoing curiosity about learning is important." (Teacher O)	"A student's desire for self-improvement and effort to learn new things is very evident."	10	Persistent curiosity in the learning process is among the key factors teachers pay attention to.

The table clearly shows that social studies teachers adopt a multifaceted and dynamic approach when recognizing unused potential. Individual observations are the most fundamental tools in potential discovery; unique questions, unconventional thinking, and active participation in discussions attract teachers'

attention. Beyond academic performance, creativity in projects, problem-solving skills, and progress in learning processes have been found to provide more meaningful insights into potential. Students’ motivation and curiosity toward their interests are frequently cited criteria in identifying potential. Furthermore, social and emotional indicators—such as leadership, empathy, and teamwork—support the idea that potential is multidimensional and not limited to academic achievement alone. Teachers also regard students’ creativity and continuous desire to learn as important components in discovering potential.

Table 2. Factors Hindering the Awareness of Potential

Sub-Themes	Interview Example	Data Written Example	Journal Number of Participants	Comments
Time Constraints	"The course schedules are very intense; we cannot allocate enough time for individual student follow-up." (Teacher M)	"Today, I couldn't spend enough time with students; lack of time is a major obstacle."	14	Most teachers reported experiencing time difficulties in observing students' potential due to a heavy curriculum and crowded classrooms.
Inadequacy of Assessment Methods	"Standard exams only measure knowledge; they fail to reveal creativity and talents." (Teacher R)	"We lack proper tools to assess students' projects and different creative works."	11	Traditional assessment tools hinder potential discovery, highlighting the need for alternative evaluation methods.
Lack of Awareness and Training	"Some teacher colleagues are not familiar with the concept of potential, making it difficult to identify students." (Teacher F)	"More emphasis on this topic is needed in professional development trainings."	10	Teachers have gaps in potential awareness, indicating a significant need for ongoing training and awareness-raising.
Student Diversity and Inclusion Challenges	"It is difficult to evaluate students with different talents and needs without discrimination." (Teacher K)	"Some students are overlooked due to hidden potentials."	8	Increasing student diversity creates challenges for teachers in recognizing and supporting all potentials.
Influence of Family and Social	"Some students lack support from their families, which hinders their role in student development."	"Family attitudes play an important role in student development."	9	Family attitudes and social environment are highlighted as

Sub-Themes	Interview Example	Data Written Example	Journal Number of Participants	Comments
Environment	their motivation and development." ability to show their potential." (Teacher T)			crucial factors affecting students' potential expression.
Lack of Resources and Facilities	"Our school lacks sufficient materials and resources, it is support programs, so difficult to apply potential cannot be different revealed." (Teacher P)	"Due to lack of resources, it is difficult to apply different learning methods."	7	Insufficient educational resources limit teachers' ability to implement practices that uncover potential.
Teacher Workload and Lack of Motivation	"Heavy workload and low motivation make it difficult to attend to students individually." (Teacher S)	"When my motivation is low, my ability to recognize potential is also negatively affected."	8	Fluctuations in teachers' workload and professional motivation directly impact the process of potential identification.

The table demonstrates that social studies teachers face various obstacles in recognizing untapped potential. One of the most common challenges is the intensity of the curriculum and lack of sufficient time. Teachers noted that in crowded classrooms, they struggle to observe each student in detail and assess individual differences adequately. Furthermore, standard assessment and evaluation methods were reported as insufficient in revealing students' creativity, critical thinking skills, and potential. This limitation restricts potential awareness and increases the need for alternative evaluation tools. Gaps in teachers' awareness and professional development related to potential were also identified as significant barriers. Social studies teachers expressed a need for more training and support to raise awareness in this area. With increasing student diversity and inclusive education demands, it has become more difficult to identify the potential of students with varying needs. Additionally, lack of family support and negative social influences hinder students' motivation and their ability to demonstrate potential.

Table 3. Pedagogical Strategies Used to Support and Develop Potential

Sub-Themes	Interview Example	Data Written Example	Journal of Participants	Number	Comments
Differentiated Instruction	"Preparing lesson plans based on students' individual interests and talents is very effective." (Teacher A)	"Differentiated activities play an important role in revealing students' potentials."		13	Teachers view developing methods tailored to different learning styles as a key strategy.
Project-Based Learning	"Students discover their talents better through projects and their self-confidence increases." (Teacher B)	"We worked on a project today; students' creativity visibly increased."		12	Project-based learning is noted as an effective method for uncovering and developing student potential.
Inquiry and Critical Thinking	"Developing students' inquiry skills helps reveal their potentials." (Teacher C)	"I try to create discussion environments in lessons to improve students' thinking skills."		14	Inquiry- and critical thinking-focused approaches are important pedagogical tools to support potential.
Guidance and Individual Counseling	"I try to guide students whose potential has been identified through one-on-one meetings." (Teacher D)	"Talking individually with a student positively affects their motivation and performance."		10	Individual guidance is frequently used by teachers during the potential development process.
Creative Drama and Art Activities	"Drama and art activities reveal different aspects of students." (Teacher E)	"Students can express themselves better through drama."		8	Creative drama and art activities are especially effective in revealing social and emotional potential.
Technology Integration	"Digital tools attract students' attention and allow them to express their potentials in different ways." (Teacher F)	"Technology-supported activities encourage innovative thinking among students."		9	Effective use of technology in education is among the modern methods endorsed by teachers.

The table shows that social studies teachers use various pedagogical strategies to support and develop students' untapped potential. The most emphasized method is differentiated instruction. Teachers noted that lesson content tailored to students' individual talents and interests is highly effective in discovering and nurturing potential. Project-based learning emerged as another important strategy, promoting active student participation and enhancing their self-confidence and creativity. Working on real-world problems allows students to concretize and develop their potential. Developing inquiry and critical thinking skills enables students to manage their own learning processes more effectively and contributes to recognizing their potential. Accordingly, discussion environments frequently appear in lessons. Individual guidance and counseling enable teachers to engage more closely with students and direct their development, yielding positive results in motivation and academic performance. Creative drama and art activities serve as effective tools for revealing students' social and emotional potential. Additionally, technology integration is identified as a key pedagogical strategy that supports students' innovative and critical thinking skills.

Table 4. Barriers and Challenges Affecting the Awareness of Potential

Sub-Themes	Interview Example	Data Written Example	Journal Number of Participants	Comments
Teacher Insufficiency and Lack of Training	"We do not have sufficient professional development opportunities to increase potential awareness." (Teacher G)	"I should have received more training on this because I missed some students' talents."	11	Lack of professional development among teachers is one of the most significant barriers in discovering and supporting potential.
Time Constraints	"The intensive curriculum and crowded classrooms make it difficult to observe individual differences." (Teacher H)	"Time is very limited, so I cannot focus enough on every student."	14	Insufficient time limits teachers' capacity to notice and support student potential.
Insufficient Resources and Support	"There are not enough materials or psychological support at school, which hinders potential development."	"Because we don't receive support, we cannot adequately guide some talented students."	10	Lack of material and psychological support are significant factors that hinder potential development.

Sub-Themes	Interview Example	Data Written Example	Journal Number of Participants	Comments
	(Teacher I)			
Student-Family-Related Challenges	"Some students and their families struggle to accept differences, which obstructs teachers." (Teacher J)	"Without family support, it is very difficult to reveal a student's potential."	12	Lack of cooperation from families and students negatively affects the recognition and development of potential.
Social and Cultural Barriers	"Stereotypes in society lead to some talents being overlooked." (Teacher K)	"Some students cannot show their talents due to societal expectations."	8	Social prejudices and cultural barriers are important factors preventing potential from emerging.

The table shows that social studies teachers face various challenges that hinder the awareness of student potential. Foremost among these is the lack of professional training and development for teachers. Participants expressed the need for more training to enhance skills related to potential discovery. Time constraints and crowded classrooms make it difficult for teachers to observe individual differences and support potential, limiting their ability to fully recognize and develop it. Insufficient materials, psychological support, and other resources at schools emerge as significant obstacles in the process of uncovering potential. Additionally, challenges originating from students and their families negatively affect the recognition and support of potential. The absence of family support or reluctance to accept differences makes teachers' efforts more difficult. Social and cultural barriers also hinder students' ability to display and develop their talents. Particularly, societal stereotypes and expectations can prevent some students from expressing their potential.

Table 5. Strategies and Recommendations for Developing Potential

Sub-Themes	Interview Example	Data Written Example	Journal Number of Participants	Comments
Individualized Teaching Approaches	"We must accept that every student is different and adapt our teaching methods accordingly." (Teacher L)	"Individualized plans are effective in revealing students' potential."	13	Teachers express that individualized education better supports students' potential.
Professional Development and Training Programs	"Continuous training and workshops on potential discovery should be organized."	"The training I receive guides me in practice and increases my	12	Ongoing professional development raises teachers' awareness and skills, improving

Sub-Themes	Interview Example	Data Written Example	Journal Number of Participants	Comments
	(Teacher M)	awareness."		implementation quality.
School and Family Collaboration	"Better communication with families is very important to support students' talents." (Teacher N)	"Working together with families positively contributes to the development of potential."	14	Active family involvement plays a critical role in recognizing and developing students' potential.
Creating Supportive Learning Environments	"Support units and resources in schools should be increased, allowing students to express themselves freely." (Teacher O)	"Environments where students feel comfortable help their potentials to emerge."	11	Providing physical and psychological support enables students to develop their unique talents.
Social Awareness and Educational Policies	"Potential awareness should be raised at the societal level, and education policies should be shaped accordingly." (Teacher P)	"Policies should offer more support to teachers and students."	10	Development of education policies and social consciousness strengthens the processes of potential discovery and support.

The table shows that social studies teachers have developed various strategies and recommendations for the development of potential. The most emphasized strategy is the use of individualized teaching approaches. Participants stated that each student has unique characteristics and that teaching methods should be planned accordingly. Furthermore, professional development programs and continuous training are seen as important tools for increasing teachers' awareness of potential. These trainings enhance teachers' skills and provide guidance in practice. School and family collaboration is critical for supporting students' talents. Teachers emphasized that effective communication and cooperation with families are decisive in the process of uncovering student potential. Creating supportive learning environments also stands out as an important strategy. Physically and psychologically supportive environments allow students to express themselves and develop their potential.



Figure 1. Word Cloud of Strategies for Developing Potential

The thematic word cloud for strategies to develop potential visually represents the key concepts emphasized by social studies teachers. The most prominent terms include individualized instruction, professional development, and family collaboration. This indicates that teachers prioritize educational approaches tailored to the diverse needs of students. Additionally, supportive environments and education policies play a critical role in uncovering and sustainably nurturing potential. Concepts such as “Inclusive Practices” and “Early Identification” appearing in the word cloud highlight teachers’ awareness of the necessity to recognize and support potential at an early stage. In this context, terms like “Teacher Training” and “Professional Development” underscore teachers’ ongoing need for learning and self-improvement. Furthermore, themes such as “Family Collaboration” and “Community Support” suggest that students’ potential can be more effectively realized through environmental and social support systems.

Conclusion and Discussion

The research findings indicate that social studies teachers adopt a multidimensional and holistic approach in identifying students' untapped potential. Potential is evaluated not only through academic achievement but also by considering various indicators such as creativity, critical thinking skills, motivation, socio-emotional competencies, and individual interests (Geisinger, 2023; Ziegler & Phillipson, 2012). Teachers form their perception of potential by carefully observing behaviors like active participation in class, original questioning, problem-solving skills, and diverse perspectives. This multidimensional recognition demonstrates that potential is not limited to knowledge or exam success but also includes attitudes and behaviors exhibited during the learning process (Subotnik et al., 2011). This approach aligns with

the fundamental principles of student-centered education (Tomlinson, 2022) and surpasses the limitations of standardized measurement tools in potential discovery. However, ensuring consistent and objective awareness among teachers can be challenging due to the subjectivity risks inherent in the observation process (Banks, 2024). Therefore, standardized observation protocols and teacher training programs should be developed to support potential identification processes (VanTassel-Baska & Baska, 2021).

The primary factors hindering teachers from recognizing students' hidden potential include time constraints, insufficient assessment tools, lack of teacher knowledge, limited resources and facilities, and challenges related to student diversity (Plucker & Callahan, 2021). Particularly, large class sizes and a dense curriculum make it difficult for teachers to observe each student in detail (Blatchford & Russell, 2020). Moreover, existing assessment tools, mostly knowledge-based, fall short in measuring competencies such as creativity and critical thinking (Renzulli & Reis, 2021). Teachers' lack of professional development in potential identification impedes the process from being conducted on a scientific and professional basis. This situation may increase subjective evaluations in recognizing potential (Whitworth & Chiu, 2015). Additionally, classroom diversity and difficulties in inclusive education practices further complicate teachers' efforts to discover the potential of students with different needs (Landsman & Lewis, 2023). The education system needs to be restructured with more flexible and supportive frameworks. In this context, improvements in policies and practices should focus on time management, professional development opportunities, and diversification of assessment tools for teachers.

Social studies teachers employ pedagogical strategies such as differentiated instruction, project-based learning, inquiry-based approaches, and individualized guidance to develop students' potential (Awoyemi et al., 2024; Suari et al., 2023). These strategies promote the emergence of potential by offering learning opportunities tailored to individual needs and interests. Project-based learning, in particular, enhances students' active engagement, fostering the development of creative and critical thinking skills (Chen et al., 2022). Individual counseling and guidance are vital in increasing motivation and ensuring sustainable development for students whose potential has been identified (Anyamene & Ngwakwe, 2020). Additionally, creative drama, art, and other creative activities provide students opportunities to develop their talents through various forms of expression (Kumar & Lal, 2025). The effectiveness of these strategies is closely related to teachers' pedagogical

competencies and levels of professional development. Therefore, enriching teacher education programs and ensuring school administrations support these practices are of great importance (Cross & Cross, 2021).

Monitoring potential refers to the regular and systematic tracking of the development process of identified talents. Teachers continuously observe and record students' academic and socio-emotional development, supporting these data with individualized feedback when necessary (Morgan et al., 2022). Multiple assessment methods such as portfolios, performance evaluations, and student-teacher interviews are used alongside standardized tests during the monitoring process (Swaran Singh et al., 2022). The multidimensional nature of assessment allows potential to be measured not only at the knowledge level but also in skills and attitudes. However, due to time and resource limitations, regular and effective monitoring activities pose challenges in practice (Renzulli & Reis, 2021). Institutionalizing monitoring and evaluation processes in education is critical for the sustainability of potential development. At this point, integrating digital tools into the process and enhancing teachers' competencies to use these tools should be prioritized (Markauskaite et al., 2023).

The findings emphasize the importance of collaboration among teachers, school administration, families, and guidance units in developing students' potential (Lunenburg & Ornstein, 2021; Cross & Cross, 2021). Sharing experiences and cultivating a culture of teamwork among teachers contribute to the dissemination of good practices and solving encountered problems. Furthermore, leadership and supportive policies from school administration increase teachers' motivation and commitment to implementation (Fullan, 2016). Active involvement of families is a critical factor in revealing and developing students' potential (Blum et al., 2014). Guidance and psychological counseling services should be regularly provided to meet students' socio-emotional needs and support potential development (Gueldner et al., 2020). This necessitates adopting multi-stakeholder approaches in education policies. Schools must be structured not only as teaching environments but also as ecosystems that support student potential.

When evaluated as a whole, the results show that social studies teachers adopt a multidimensional and interactive approach in recognizing, monitoring, assessing, and developing students' potential. However, this process faces various obstacles and requires not only pedagogical strategies but also systemic arrangements. Increasing teachers' professional development opportunities, diversifying in-class observation and assessment tools, reducing workload, strengthening multi-stakeholder collaboration mechanisms, and enhancing in-

school resources are essential for more effectively revealing students' potential. In this regard, comprehensive and sustainable strategies should be developed through collaboration among policymakers, school administrators, and teachers (VanTassel-Baska & Baska, 2021).

Recommendations for Future Research

Based on the findings of this study, several recommendations have been developed. First, pre-service and in-service teacher education programs should include content on differentiated instruction, fostering creative thinking, and individualized assessment methods to help social studies teachers better recognize students' potentials. To enable teachers to systematically monitor student development, digital portfolios, structured observation forms, and student tracking systems should be widely implemented, accompanied by professional development opportunities that support effective use of these tools. Moreover, multi-stakeholder communication models that strengthen collaboration among teachers, guidance counselors, parents, and school administrators should be promoted, especially by developing collective decision-making mechanisms during student identification and referral processes. School administrators are encouraged to adopt supportive leadership approaches that facilitate teachers' development of creative and inclusive practices. Structural adjustments such as reducing class sizes and employing teacher assistants are also recommended.

Since this study relied solely on teacher perspectives, future research should involve students, parents, and guidance personnel to provide a more comprehensive qualitative and quantitative understanding of potential awareness. Although this study offers qualitative insights into social studies teachers' processes for recognizing gifted students' potential, the generalizability of its findings is limited. Therefore, future research with large, geographically diverse samples and quantitative designs is suggested to identify variables influencing potential awareness. Furthermore, multi-stakeholder studies including students, parents, and guidance counselors would contribute to a holistic understanding of the recognition and support of student potential. Comparative studies investigating potential awareness levels across different subject teachers could also enrich interdisciplinary approaches. On the qualitative side, action research or case studies evaluating the effectiveness of teacher training programs aimed at increasing potential awareness are recommended. Finally, innovative studies exploring the impact of artificial intelligence, digital diagnostic tools, and data-driven student monitoring systems on potential awareness would provide valuable contributions to the literature.

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Chapter 4

Contemporary Technologies as Epistemic Contexts for Mathematics Education

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INTRODUCTION

In recent years, mathematics education has undergone a profound transformation driven by rapid technological, social, and scientific advancements. Mathematics is no longer viewed solely as a discipline concerned with abstract symbols and formal procedures; rather, it is increasingly recognized as a dynamic field that interacts with contemporary technologies, real-world problems, and interdisciplinary modes of thinking. In this context, emerging and popular technological domains have begun to offer powerful and meaningful frameworks through which mathematical concepts can be taught, explored, and reinterpreted. This chapter brings together six such domains that have gained significant attention in both academic research and applied projects: mathematical cryptography, quantum computing, gamified financial literacy, digital twin technology, blockchain technology, and mobile learning. It examines their potential contributions to mathematics education.

The selection of these topics is deliberate. Each represents a key technological and intellectual development of our era and reflects broader shifts in how knowledge is produced, secured, modeled, and communicated. At the same time, all six domains are deeply rooted in mathematical structures, reasoning processes, and representational systems. Cryptography demonstrates the power of functions, inverse operations, number theory, and algorithmic thinking in securing information. Quantum computing introduces students to linear algebra, probability, and transformation-based reasoning in a context that challenges classical notions of certainty. Gamified financial literacy situates mathematical reasoning within everyday decision-making processes, highlighting the role of mathematics in managing resources, evaluating risk, and making informed choices. Digital twin technology emphasizes mathematical modeling, data-driven reasoning, and the dynamic relationship between abstract models and real-world systems. Blockchain technology reveals the

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mathematical logic behind trust, verification, and immutability in distributed systems. Finally, mobile learning reshapes the conditions of mathematical education by enabling flexible, contextualized, and continuous engagement with mathematical ideas beyond traditional classroom boundaries.

Taken together, these topics illustrate how mathematics education can be enriched by contemporary contexts that are both intellectually rigorous and socially relevant. Rather than treating technology as an add-on or merely a motivational tool, the chapters in this chapter approach these domains as epistemic contexts in which mathematical thinking becomes visible, necessary, and meaningful. They demonstrate how abstract mathematical concepts can be grounded in authentic problems, how modeling and representation can be emphasized as central mathematical practices, and how learners can be encouraged to view mathematics as a living discipline that evolves alongside scientific and technological progress.

This book chapter is intended for researchers, teacher educators, graduate students, and project coordinators seeking innovative yet theoretically grounded approaches in mathematics education. The chapters aim to inspire new research questions, support the design of interdisciplinary studies, and provide conceptual foundations for educational projects aligned with contemporary societal needs. By presenting diverse yet interconnected perspectives, the chapter invites readers to reconsider what it means to teach and learn mathematics in the twenty-first century and to explore how emerging technologies can serve not as ends in themselves but as powerful tools for deepening mathematical understanding and expanding the horizons of mathematics education.

Mathematical Cryptography

Cryptography is considered a technical application aimed at ensuring information security and an interdisciplinary field that makes visible the structure of mathematical thinking and enables abstract concepts to be addressed within meaningful contexts. The encryption and decryption processes within cryptography are modeled through mathematically defined transformations, functions, and inverse functions. The security of these models is based on mathematical problems considered computationally difficult to solve (Rana, 2022; Zapechnikov, Miloslavskaya & Budzko, 2015). Prime numbers, modular arithmetic, functional relations, and algebraic structures, which form the basis of modern cryptographic systems, play critical roles in key generation and secure communication processes. Problems such as prime factorization and modular operations, based on number theory, form the

mathematical foundation of cryptographic security (Patili, Mirou, Andrews & Aghaeiboorkheili, 2025). Bringing this mathematical foundation into educational settings has become one of the key elements increasing the importance of cryptography in mathematics education. Research in mathematics education shows that using cryptography-based activities in the classroom enables students to grasp the concept of functions, inverse operation relationships, and algebraic thinking processes in a deeper and more meaningful way (Erol, 2015; Spaht, Link & Martin, 2022). Especially in middle and high school applications, cryptography activities have the power to connect the abstract nature of mathematics with daily life, thus increasing students' interest in the subject and supporting the retention of learned concepts (Göktepe Yıldız & Özdemir, 2015; Özdemir & Erbay, 2015). In the international literature, the integration of cryptography into mathematics teaching is generally addressed through algorithmic thinking, functional relationships, and mathematical transformations. Encryption and decryption processes help students understand mathematical operations in a more conscious, logical, and reasoned manner (Spaht et al., 2022). On the other hand, the digitalization and widespread use of distance education applications have shown that cryptography can be effectively taught in different learning environments. Thus, mathematical content and the context of information security can be successfully combined in online environments (Zapechnikov et al., 2015). On the other hand, STEAM-based instructional designs address cryptography not only in terms of mathematics but also in conjunction with technology and engineering components, equipping students with interdisciplinary thinking skills and offering rich learning experiences (Roldán-Zafra & Perea, 2022). In all these aspects, cryptography is considered an important teaching tool because it provides a strong and meaningful context for mathematical concepts, develops reverse thinking and algorithmic reasoning skills, and contributes to the perception of mathematics not as a static field of knowledge but as a dynamic and constantly evolving science. Findings in the literature show that the inclusion of cryptography in mathematics curricula is pedagogically sound and offers a contemporary learning environment that integrates mathematics with real life (Rosamond, 2018).

Quantum Computing

Quantum computing offers a fundamentally different approach to information processing compared to classical computers, as it is based on the principles of quantum mechanics. While classical computers represent information using bits that can only take the values 0 or 1, quantum computers

use quantum bits, or qubits. Qubits can simultaneously exist in both the 0 and 1 states in varying proportions, a property known as superposition. Although this concept may initially appear to be purely a physical phenomenon, it is important to recognize that quantum computing relies heavily on mathematical frameworks. A thorough understanding of quantum algorithms is impossible without fully comprehending these mathematical representations (Bernhardt, 2019; Rieffel & Polak, 2011). Qubits are mathematically represented as vectors, and operations within quantum systems are described by linear transformations applied to these vectors. Consequently, topics such as linear algebra, vectors, matrices, and transformations form the foundational language of quantum computing (Scherer, 2019). For instance, quantum gates are represented by matrices, and the action of these matrices on vectors illustrates how the system evolves. This approach aligns with the mathematical principle that "the effect of a transformation in space can be understood through its impact on fundamental vectors." Therefore, students can directly observe how abstract mathematical concepts are concretely applied in advanced technological fields (Di Mauro & Naddeo, 2021). The relationship between quantum computing and mathematics extends beyond the concepts and tools employed; it also influences modes of thinking. In quantum systems, measurement outcomes are probabilistic rather than deterministic. This demonstrates that probability is not merely a computational tool but also a conceptual framework for modeling uncertainty (Kaya, Çelik & Ural, 2022). In this context, quantum computing encourages students to challenge their expectations of certainty and to explore the conditions under which mathematical models remain valid. From an educational perspective, quantum computing provides a powerful and contemporary context for teaching mathematics. Research indicates that quantum technologies can be effectively taught not only at the university level but also at earlier stages of education (Foti et al., 2021; Murina, 2020). Specifically, teaching activities developed for high school students demonstrate that fundamental quantum concepts can be communicated through simple mathematical representations and intuitive methods, without requiring an in-depth understanding of complex physical details (Angara, Stege & MacLean, 2020). The goal of these activities is not for students to master quantum computing in exhaustive detail but to help them appreciate how mathematical thinking interacts with modern science and technology. Pedagogically, quantum computing offers a rich context for teaching mathematical concepts such as representation, modeling, functional thinking, and transformation. When students understand a quantum operation as "a mathematical process that transforms an input state into a different output," they can connect the concept of a function to a deeper and more practical

context. Moreover, applications like quantum algorithms, encryption methods, and quantum communication can enhance student engagement by demonstrating the real-world relevance of abstract mathematical concepts (Nita et al., 2021; Rasa, Palmgren & Laherto, 2022). Educational research indicates that quantum-focused courses and activities can positively influence students' future-oriented thinking, their ability to cope with uncertainty, and their scientific self-efficacy (Rasa et al., 2022). However, the literature also highlights that teaching quantum concepts may lead to misconceptions; therefore, instructional designs must be carefully structured (Krijtenburg-Lewerissa et al., 2017). Considering all these findings, the role of quantum computing in mathematics education extends beyond merely introducing a new topic; it has the potential to transform how learning and teaching are understood. Quantum computing redefines mathematics from a discipline concerned solely with symbols to a mode of thinking and expression that underpins modern science and technology. This context provides students with the opportunity to ask, is mathematics learned? Where is it applied? And when does it make sense? Consequently, quantum computing can be regarded as a powerful teaching domain that offers a meaningful, holistic, and contemporary learning experience in mathematics education.

Gamified Financial Literacy

Financial literacy encompasses the knowledge, skills, and attitudes that enable individuals to make informed and responsible decisions regarding earning income, spending, saving, borrowing, and investing. This concept extends beyond merely possessing economic knowledge; it also involves the ability to understand, evaluate, and take appropriate actions in financial situations encountered in daily life. The Organisation for Economic Co-Operation and Development (OECD, 2020, 2022) defines financial literacy as the combination of knowledge, skills, and attitudes necessary for individuals to make effective financial decisions. Similarly, within the PISA framework, financial literacy is associated with students' ability to analyze real-life financial problems, apply mathematical tools, and interpret results (PISA, 2018, 2022). In Turkey, the Turkish Century Education Model considers financial literacy a fundamental competency that enhances students' daily life skills and aims to integrate conscious consumption, saving awareness, income management, and investment awareness into the education process (Ministry of National Education, 2024). When these approaches are considered together, it becomes clear that financial literacy is directly linked to mathematical thinking, problem-solving, and decision-making skills. Indeed, research shows that financial

decisions often rely on mathematical processes such as establishing ratios and proportions, calculating percentages, interpreting graphs and tables, budget planning, and risk analysis. Moreover, individuals with high mathematical literacy tend to make healthier financial decisions (Lusardi & Mitchell, 2014; OECD, 2022). In this context, mathematics education provides a robust and natural environment for developing financial literacy. When mathematical topics such as numbers, operations, ratios, and data analysis are presented through financial scenarios, students find it easier to connect mathematics to real life, making learning more meaningful. Recent studies show that mathematically based financial examples enhance both students' mathematical achievement and their financial awareness (Batty, Collins & Odders-White, 2015; Skagerlund et al., 2018). Although Turkish curricula include topics such as money, shopping, and data, the current trend is to address these subjects not only through information transfer but also within the context of decision-making and problem-solving (MEB, 2018, 2024). At this point, the gamified financial literacy approach emerges as a significant educational tool. Gamification seeks to enhance student motivation, participation, and engagement by incorporating game-specific elements into non-game contexts (Deterding et al., 2011). Recent studies indicate that gamified learning environments, particularly those delivered via digital platforms, boost lesson participation, promote sustained learning, and can foster positive changes in student behavior (Sailer & Homner, 2020). Gamification in the context of financial literacy offers an effective learning process by promoting behaviors such as budgeting, setting savings goals, prioritizing spending, and developing risk awareness through task-oriented scenarios, real-time feedback, and progress indicators (Bayuk & Altobello, 2019; Farrell, Fry & Risse, 2016). Recent research conducted via mobile applications and digital learning environments demonstrates that gamified financial education can enhance financial awareness and self-regulation skills, particularly among young individuals (Kaiser et al., 2022). Gamified financial literacy combines mathematical operations with financial decision-making processes within a single learning activity. Through tasks such as calculating discounts, analyzing profit and loss, making choices within a limited budget, and planning savings, students enhance both their mathematical knowledge and real-life problem-solving skills. This integrated teaching approach helps students develop positive attitudes toward mathematics, reduces anxiety, and highlights the practical applications of mathematics. However, the literature cautions that reducing gamification solely to rewards and point accumulation can result in superficial learning. Therefore, it is emphasized that gamified financial literacy activities

should be designed with clear objectives, measurable achievements, and integration with real-life scenarios (OECD, 2022).

Digital Twin Technology

Digital twin technology is based on the concept of creating a virtual representation of a physical object or system, continuously updating this representation with data from the physical world. This enables its use for monitoring, analysis, prediction, and decision support (Grieves & Vickers, 2017; Qi & Tao, 2018). This approach is not merely a simulation; it constitutes a dynamic structure in which the physical entity, the virtual model, and the data link between them work together. This structure is powered by technologies such as sensors, the Internet of Things, cloud infrastructures, and artificial intelligence (Qi et al., 2021; Semeraro et al., 2021). The reliability and usefulness of digital twins depend significantly on mathematical foundations, as modeling and simulation, optimization, parameter estimation, inverse problems, uncertainty management, and data-driven predictive methods play critical roles in their proper functioning (Hartmann & Van der Auweraer, 2025; Semeraro et al., 2021). In the literature, taxonomies have been developed to classify digital twins at different levels, thereby systematically explaining their types and uses (Van der Valk et al., 2020). In the context of education, a digital twin is considered a digital representation of the learning environment or laboratory processes, especially as a solution that enhances access to practice and experience in distance and blended learning (Palmer et al., 2022; Zacher, 2020). In engineering and vocational education, digital twins are used for course design, project-based learning, and the development of applied skills. Notably, applications such as the digital twinning of remote laboratories support online practical learning (Liljaniemi & Paavilainen, 2020; Nikolaev et al., 2018; Palmer et al., 2022). Furthermore, the widespread adoption of digital twins in education requires consideration of infrastructure, teacher competency, application ecosystems, and policy dimensions. It is also argued that digital twin-based laboratories can offer significant opportunities, particularly in terms of promoting equal access (Kangisser et al., 2022; Zacher, 2020). In mathematics education, digital twin technology is significant in two main ways: first, it enhances students' understanding of mathematical concepts by visualizing them through dynamic and multiple representations; second, it fosters a culture of mathematical modeling by emphasizing the relationship between data and models within the classroom (Qi et al., 2021; Wang, 2021). For example, digital twin-based platforms have been shown to provide three-dimensional visualization and interactive learning opportunities in analytical

geometry topics that require spatial thinking, thereby enhancing students' conceptual understanding and performance outcomes (Wang, 2021). From a pedagogical perspective, these applications are significant because they enable students to explore concepts such as coordinates, vectors, transformations, and spatial geometry from multiple viewpoints rather than being limited to a single representation (Wang, 2021). Furthermore, the data-driven nature of digital twins, when integrated with assessment and learning analytics, allows teachers to monitor the learning process not only through outcome scores but also by analyzing process data, generating targeted feedback, and making more evidence-based instructional decisions (Palmer et al., 2022; Zacher, 2020). In mathematics, the digital twin approach goes beyond mere visual enhancement; it inherently makes visible cyclical processes such as model building, parameter selection, reconciling data with the model, interpreting errors and ambiguities, and updating the model as needed. These processes constitute the core of mathematical reasoning (Hartmann & Van der Auweraer, 2025; Semeraro et al., 2021). Therefore, digital twin technology can be regarded as a powerful context in mathematics education that facilitates the exploration of real-life systems through mathematical representations and supports students' skills in modeling, problem-solving, representation transformation, and data literacy (Qi & Tao, 2018; Qi et al., 2021). In conclusion, for digital twins to be used sustainably and effectively in mathematics education, teachers must enhance their digital pedagogical competencies and data literacy, as well as strengthen the mathematical and computational foundations that underpin the modeling processes (Liljaniemi & Paavilainen, 2020; Semeraro et al., 2021).

Blockchain Technology

In its simplest form, blockchain technology is a distributed ledger system in which data is stored across a shared ledger among numerous participants in the network rather than a single central authority. This record is secured by cryptographic links that make it difficult to alter later (Ainsworth & Alwohaibi, 2017; Atabaş, 2018; Hassan, Jain & Chandna, 2018). A noteworthy aspect of this approach for educational sciences, particularly mathematics education, is that blockchain is not only a technological innovation but also a concrete application of mathematical thinking. The verification of transactions, the linking of blocks, the maintenance of consistency, and the generation of trust without a central authority are all directly explained by mathematical principles (Nick, 2024). The widespread adoption of blockchain has been accelerated by the emergence of a peer-to-peer digital transfer system that bases trust not on institutions but on a cryptography-based ledger (Nakamoto, 2008). In an

educational context, this allows students to explore concepts such as trust, verification, and immutability through mathematical logic rather than technology. For example, the "immutability" of data is not a magical property but relates to the cryptographic linking of successive blocks, making any changes visible through hash values (Samala et al., 2024). While blockchain is designed as a ledger that verifies and shares transaction records, it also opens opportunities for educational institutions to verify diplomas and academic records, reduce fraud, monitor learning processes, and securely store assessment evidence (Machado et al., 2020). This creates a twofold opportunity for mathematics education: first, to make the mathematical structures underlying blockchain a teaching focus; and second, to make the measurement and documentation ecosystem of mathematical learning more transparent and verifiable (Machado et al., 2020; Samala et al., 2024). At the first level, blockchain architecture can be connected to mathematical thinking skills at the high school and undergraduate levels. Concepts such as logical reasoning and the idea of proof (verifying a record), the concept of functions (inputs and outputs of hash functions), probability and risk considerations (network attacks and security assumptions), as well as modeling network and sequential structures, can be transformed into meaningful problem situations in instructional contexts (Nick, 2024; Samala et al., 2024). For example, students can integrate mathematical ideas such as variability, sensitivity, and verification with technological literacy by discussing why a small change in one block disrupts the verification logic of the entire chain through variations in hash outputs (Samala et al., 2024). At the second level, the contribution of blockchain to educational management and assessment processes is emphasized. Scenarios such as certificate verification, accreditation processes, recording learning outcomes, and even automated certification under certain conditions via smart contracts are linked to the goals of data security and process transparency in educational institutions (Samala et al., 2024). The concept of the "smart contract" is particularly well-suited to establishing pedagogical connections in mathematics education, especially with algorithmic thinking and conditional logic (if-then rules), as well as the concepts of verification and control. Students can develop fault tolerance and systems thinking by exploring the consequences that may arise if a rule set is misdefined (Samala et al., 2024). Some studies on the use of blockchain in education indicate that applications are still evolving. Institutions primarily implement blockchain in areas such as certification and record verification, while challenges including standardization, privacy, security, technical expertise, and adoption remain critical (Machado et al., 2020; Samala et al., 2024). These

findings also offer an important caution for mathematics education: rather than presenting blockchain in the classroom merely as a novelty, there is a need for learning designs that enable students to understand the mathematical foundations, identify misconceptions, and engage in critical evaluation. Otherwise, the technology risks overshadowing the pedagogical objectives (Samala et al., 2024). Therefore, in mathematics education, blockchain can be viewed both as a learning environment that supports understanding of mathematical fields such as cryptography, verification, probability, and algorithmic thinking in real-world contexts, and as an educational technology framework that fosters discussions on reliability and transparency in assessment and documentation processes (Machado et al., 2020; Nick, 2024; Samala et al., 2024). To ensure this approach remains accessible at the high school and undergraduate levels, instructional design should incorporate concrete examples, small-scale simulations, simple verification scenarios, and real-life record verification problems. Establishing connections with relevant stakeholders and discussing the question do we trust? with mathematical justifications at every step will be crucial (Atabaş, 2018; Hassan et al., 2018; Samala et al., 2024).

Mobile Learning

Mobile learning is defined as accessing learning networks through mobile devices and wireless networks to support the teaching-learning process. It is distinguished by offering learners the opportunity to access information anytime and anywhere, relatively independent of time and place (Mehdipour & Zerehkafi, 2013; Seppälä & Alamäki, 2003; Yıldırım, 2012). The literature emphasizes that mobile learning is not merely a combination of the words "mobile" and "learning," and that narrow, device-centric definitions can limit its scope. Conversely, the common denominator of these definitions is learning that is independent of time and place, accessible, and transferable between in-school and out-of-school contexts (Alrasheedi et al., 2015; Alsancak Sırakaya & Seferoğlu, 2018; Baysal et al., 2017; Martin & Ertzberger, 2013). The main advantages that enhance the educational value of this approach include access to information anytime and anywhere, a learner-centered structure, reaching wider audiences, instant feedback, rapid access, reducing the impact of interruptions in education, and establishing a link between in-class and out-of-class learning (Ergüney, 2017; Kukulska-Hulme & Shield, 2008; Sharples, Taylor & Vavoula, 2005; Uzunboylu et al., 2009; Üstun, 2019). In mathematics education, mobile learning has become an important research area because mobile technology can contribute to the acquisition of mathematical knowledge, skills, and experience.

Review findings have shown that mathematics is one of the most frequently studied subject areas in mobile learning research (Crompton, Burke & Gregory, 2017; Kyriakides et al., 2016). The use of mobile technologies in mathematics learning and teaching can help students become aware of and improve their mathematical skills, support conceptual understanding, and create meaningful learning experiences based on mathematical modeling of real-life problems (Attewell, 2005; Sollervall et al., 2012; Sincuba & John, 2017). Furthermore, research shows that mobile learning positively affects cognitive outcomes such as mathematical achievement and problem-solving, as well as affective outcomes such as attitudes and motivation (Daher, 2010; Riconscente, 2013; Al-Khateeb, 2018; Saedi et al., 2018; McCabe & Tedesco, 2012; Taleb et al., 2015). However, these benefits do not occur spontaneously; the impact of mobile learning largely depends on the quality of pedagogical design. In other words, portability and multimedia features can only be transformed into instructional power through well-designed tasks, appropriate feedback mechanisms, and classroom interaction design (Sincuba & John, 2017). When considering the spread of mobile learning among teachers and prospective teachers within the framework of Diffusion of Innovation Theory, it is observed that adoption accelerates as the relative advantage, adaptability, testability, and observability of the innovation increase; conversely, adoption becomes more difficult as the perception of complexity increases (Rogers, 2003; Köse, 2012; Tidd & Bessant, 2001). A study conducted with prospective mathematics teachers reported that mobile learning readiness was a significant predictor of mobile learning adoption and explained a significant portion of the variance in adoption (Açıkgül & Diri, 2020). On the other hand, the limitations of mobile learning should not be overlooked. Factors such as cost, technical issues, distractions, health risks, exposure to inappropriate content, and inequalities in device and internet access are significant challenges that must be addressed during the design and implementation phases (Yetkin et al., 2022; Tümkaya & Hürriyetoğlu, 2023; Özbay, 2016; Özbay & Canbazoglu-Bilici, 2020; Domoff et al., 2019). Within this framework, mobile learning in mathematics education, when designed as an instructional approach that goes beyond simple screen based practice and instead supports computational fluency through short and goal oriented tasks, deepens understanding through multiple representations and conceptual explanations, contextualizes learning using real life data and mathematical modeling activities, and is embedded within a blended learning flow that encourages classroom discussion, can offer an accessible and pedagogically effective learning ecosystem for undergraduate students (Sharples et al., 2005; Açıkgül & Diri, 2020; Sincuba & John, 2017).

Notes

Ethical Statement: I declare that this study complies with the rules specified in the Guidelines for Scientific Research and Publication Ethics in Higher Education Institutions and that I have not taken any action based on practices contrary to scientific research and publication ethics. I also declare that I accept full responsibility for all ethical violations.

Ethics Committee Approval: Since no other applications were made to humans or animals for this study, ethics committee approval was not obtained. The research process was conducted in accordance with scientific ethical rules, and the rights of the authors were respected. All sources used are cited in accordance with academic norms. The study is original and has not been previously published or reviewed anywhere.

Data Availability Statement: This book chapter does not involve the collection, generation, or analysis of empirical data. The study is based on a conceptual and literature driven examination of contemporary technological domains within the context of mathematics education. All sources used are publicly available academic publications, and no datasets were created or analyzed for the purposes of this work.

Artificial Intelligence Usage Statement: Artificial intelligence tools were used in a limited and supportive manner during the preparation of this book chapter to assist with language refinement, academic phrasing, and structural organization. All conceptual decisions, interpretations, and academic judgments remain the sole responsibility of the author. The use of artificial intelligence did not replace scholarly reasoning, data analysis, or original academic contribution.

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Chapter 5

Examining Online Privacy Awareness in the Context of Artificial Intelligence

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INTRODUCTION

The rapid advancement of digital technologies has made the internet an indispensable component of contemporary life. The increasing portability of computers and mobile devices enables individuals to remain online almost constantly throughout the day. As a result, the internet is now widely used across various domains, including communication, entertainment, shopping, banking, and education. Early exposure to digital environments has led online behaviors to become deeply embedded in individuals' daily routines, fostering a reliance on digital tools across multiple aspects of life. Although the widespread use of the internet facilitates access to information, it has simultaneously heightened concerns regarding privacy violations. Online environments have evolved into spaces where users knowingly—or more often unknowingly—share personal data, thereby encountering risks related to traceability and surveillance. Existing literature suggests that despite extensive information sharing in digital settings, individuals often fail to adequately recognize privacy threats (Debatin et al., 2009; Cho, Lee & Chung, 2010). Studies conducted in Türkiye similarly indicate that university students, despite their intensive engagement with online activities, may not perceive digital risks as seriously as physical dangers (Sirakaya & Alsancak-Sirakaya, 2024). These findings suggest that the advantages offered by digital environments—such as rapid communication, visibility, and convenience—may obscure individuals' perceptions of risk.

The concept of privacy refers to individuals' control over their personal information and their right to determine with whom, for what purpose, and to what extent such information is shared (Aslanyürek, 2016). Widely used digital services, including social media platforms, mobile applications, and e-commerce websites, continuously collect user data. Consequently, individuals leave digital traces—often without realizing it—which raises new concerns regarding data ownership and the protection of personal information. Wu et al. (2011) argue that the increasing

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surveillance capacity of online environments has diversified and intensified privacy violations. In this regard, online privacy has transcended the boundaries of personal preference or awareness and has become a crucial component of digital security.

In recent years, studies on online privacy in Türkiye have increasingly focused on university students' levels of awareness and concern. Karadaş and Kara (2021) report that students' online privacy awareness is generally high and that factors such as age, years of internet use, mobile device usage history, and digital literacy significantly influence this awareness. Töngel (2020) further demonstrates that online privacy awareness is positively associated with digital literacy and virtual interpersonal trust, and that receiving training in information technologies strengthens privacy awareness. These findings emphasize that privacy awareness encompasses not only behavioral but also cognitive dimensions. Research conducted with groups other than university students supports this multidimensional perspective. For example, Bayzan's (2025) study with parents shows that online privacy concerns are influenced by demographic factors such as educational level, place of residence, and social media experience, and that privacy concerns—although at a low level—are significantly related to social media behaviors. The Online Privacy Awareness Scale (OPAS) developed by Korkmaz, Vergili, and Karadaş (2021) provides empirical evidence of this multidimensional structure, identifying subdimensions such as “attention,” “security,” and “communication-sharing.”

Parallel to this transformation within the digital ecosystem, the rapid development of artificial intelligence (AI) technologies has introduced a new dimension to online privacy debates. As AI becomes increasingly embedded in daily life, the digital traces individuals leave behind no longer function merely as passive data points; instead, they are processed, analyzed, and transformed into predictive outputs by algorithms. AI's advanced data-processing capacity allows online behaviors to be monitored, profiled, and integrated into decision-making processes with unprecedented depth. Thus, AI reshapes the nature of digital privacy not only technically but also cognitively, ethically, and psychosocially. Historically rooted in the 1950s, AI research emerged from the fundamental question of whether machines could think, marking the beginning of efforts to develop systems capable of human-like cognitive abilities (Sirakaya & Alsancak-Sirakaya, 2025). In its broadest sense, AI refers to computational systems designed to replicate human behaviors such as reasoning, learning, and problem-solving (Taşkın & Adalı, 2004).

AI systems rely on algorithms that model cognitive processes such as perception, reasoning, interpretation, generalization, and adaptation. While early AI systems were limited to performing predefined tasks, contemporary AI technologies are capable of learning from experience and enhancing their performance accordingly (Alsancak Sirakaya & Sirakaya, 2024). Hamet and Tremblay (2017) characterize

modern AI as an engineering domain capable of generating innovative solutions for complex problems, whereas Obschonka and Audretsch (2020) emphasize AI's ability to self-improve based on accumulated experience rather than merely processing existing data. The development of AI is therefore not only a technical process but also a societal, cultural, and psychological one. For instance, Gür, Ayden, and Yücel (2019) highlight AI's transformative effects across various sectors, including health, education, engineering, and human resources. Nonetheless, these transformations may also provoke feelings of uncertainty, anxiety, distrust, and ethical concern among individuals (Johnson & Verdicchio, 2017).

The deep integration of AI into digital life introduces new dynamics that may directly or indirectly influence individuals' online privacy behaviors. University students' interactions with AI-based tools, their trust in these technologies, their perceptions of AI-generated responses, and their satisfaction with AI services may shape their online decision-making, data-sharing behaviors, and risk perceptions. Recent studies indicate that students' attitudes toward AI and their levels of AI-related anxiety vary considerably, and that these factors substantially influence their cognitive and affective engagement with technology (Alsancak Sırakaya & Sırakaya, 2024; Sırakaya & Alsancak Sırakaya, 2025). Accordingly, variables such as AI literacy, frequency of AI use, and trust in AI services may play a critical role in individuals' digital behaviors. Thus, online privacy awareness must now be examined not only through traditional demographic or digital usage patterns but also through cognitive and behavioral variables associated with AI. The nature of digital privacy is increasingly linked not merely to the amount of data an individual shares, but to their understanding of how this data is processed, stored, reproduced, and utilized by AI systems in decision-making processes. In this context, the present study seeks to contribute to the literature by addressing the following research questions:

1. What are the online privacy awareness levels of university students?
2. Does receiving training in artificial intelligence lead to a significant difference in online privacy awareness?
3. Does the frequency of artificial intelligence use create a significant difference in online privacy awareness?
4. Does trust in artificial intelligence responses create a significant difference in online privacy awareness?

METHOD

Research Method

The survey method was employed in this study. Compared with other research designs, the survey model enables the collection of data from a larger group of participants (Fraenkel & Wallen, 2006). The primary aim of this model is to present the existing situation as it is, essentially capturing a snapshot of the current state (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2008).

Study Group

The study group consisted of 141 university students. The participants were selected through a convenient sampling method, whereby the researchers began with individuals who were easily accessible and continued until the required sample size was reached (Büyüköztürk et al., 2008).

Data Collection Tools

Personal Information Form: Demographic information about the participants was collected using a Personal Information Form developed by the researchers. This form included questions regarding whether participants had received training in artificial intelligence, their frequency of AI use, and their level of trust in AI-generated responses.

Online Privacy Awareness Scale: The Online Privacy Awareness Scale developed by Korkmaz, Vergili, and Karadaş (2021) was utilized in the study. The scale consists of 17 items rated on a five-point Likert-type format and comprises three factors. Analyses conducted by the developers indicated that the three-factor structure explained 47.709% of the total variance. The reliability coefficient (Cronbach's α) for the entire scale was reported as .794. These results demonstrate that the scale is a valid and reliable measurement instrument.

Data Analysis

The initial step in the data analysis process involved examining the normality of the score distributions obtained from the Online Privacy Awareness Scale. Since the sample size exceeded 50 participants, the Kolmogorov–Smirnov test was used to assess normality (Büyüköztürk, 2007). The results of this test are presented in Table 1.

Table 1. Kolmogorov–Smirnov test results for the subdimensions of the online privacy awareness scale

Variable	Mean	Standard Deviation	Kolmogorov–Smirnov	p
Online Privacy Awareness	59.37	11.12	0.1514	0.0027

An examination of Table 1 indicates that, based on the Kolmogorov–Smirnov test ($p < .05$) and the assessment of Q–Q plot graphs, the scores obtained from the Online Privacy Awareness Scale do not follow a normal distribution. Therefore, non-parametric tests were deemed appropriate for use in the analysis.

FINDINGS AND RESULTS

Online Privacy Awareness Levels

The distribution of university students’ online privacy awareness scores across the subdimensions and the total scale is presented in Table 2.

Table 2. Distribution of online privacy awareness across subdimensions and total score

Subdimension	Mean	SD	Min	Max	Median
Attention	29.65	5.78	7	35	31
Security	19.03	4.54	6	25	19
Communication/Sharing	10.69	3.97	5	25	10
Online Privacy	59.37	11.12	18	81	61

An examination of Table 2 reveals that the attention subdimension has the highest level of awareness based on the mean scores. In contrast, the communication/sharing subdimension demonstrates the lowest level of awareness. The total score obtained from the scale indicates that university students possess a moderate level of online privacy awareness overall.

Changes in Online Privacy Awareness Based on Receiving Artificial Intelligence Training

The results of the Mann–Whitney U test conducted to examine whether university students’ online privacy awareness differs based on whether they have received training in artificial intelligence are presented in Table 3.

Table 3. Changes in online privacy awareness based on receiving artificial intelligence training

AI Training	N	Mean Rank	Sum of Ranks	U	z	p
Yes	32	58.77	1880.50	1404.50	-1.67	0.095
No	109	73.57	8019.50			

An examination of Table 3 shows that university students’ online privacy awareness does not significantly differ based on whether they have received artificial intelligence training ($U = 1404.50$, $p > .05$). This finding suggests that receiving AI training does not meaningfully influence students’ levels of online privacy awareness.

Changes in Online Privacy Awareness Based on the Frequency of Artificial Intelligence Use

The results of the Kruskal–Wallis H test conducted to determine whether university students’ online privacy awareness differs according to their frequency of artificial intelligence use are presented in Table 4.

Table 4. Changes in online privacy awareness based on the frequency of artificial intelligence use

Frequency of AI Use	N	Mean Rank	sd	X2	p	Significant Difference
Do not use	5	61.10	2	6.51	0.164	---
Once a week	15	92.63				
Once every 2–3 days	47	63.23				
Once a day	27	75.22				
Multiple times a day	47	70.49				

An examination of Table 4 shows that university students’ online privacy awareness does not significantly differ according to their frequency of AI use [$X^2_{(2)} = 6.51$, $p > .05$]. This finding may be interpreted to mean that the frequency of AI use does not influence university students’ online privacy awareness.

Changes in Online Privacy Awareness Based on Trust in Artificial Intelligence Responses

The results of the Kruskal–Wallis H test conducted to determine whether university students’ online privacy awareness differs according to their level of trust in AI-generated responses are presented in Table 5.

Table 5. Changes in online privacy awareness based on trust in ai responses

Trust in AI Responses	N	Mean Rank	sd	X2	p	Significant Difference
Provides completely accurate answers	9	72.83	2	0.93	0.628	---
Provides partially accurate answers	69	74.12				
Provides accurate answers	63	67.33				

An examination of Table 5 shows that university students’ online privacy awareness does not significantly differ according to their level of trust in AI-generated responses [$X^2_{(2)} = 0.93$, $p > .05$]. This finding may be interpreted to mean that trust in AI responses does not influence university students’ online privacy awareness. However, the most notable result here is that all students believe the answers provided by AI are accurate.

CONCLUSION and DISCUSSION

The first aspect examined in this study was the level of university students’ online privacy awareness. The analyses indicate that participants possess a moderate level of online privacy awareness. Among the subdimensions, university students demonstrated the lowest level of awareness in the communication/sharing subdimension. Similarly, studies conducted with comparable sample groups reported that participants generally exhibit moderate levels of online privacy awareness (Bozdağ Tulum, 2025; Gültekin, 2024). However, the literature also includes studies suggesting that participants have high levels of online privacy awareness (Avcı & Kayıran, 2023; Karadaş & Kara, 2021).

The results of the study revealed that university students’ online privacy awareness did not significantly differ based on whether they had received AI training. One possible explanation is that many students use AI technologies primarily for practical purposes and may lack sufficient knowledge regarding how AI processes data or the privacy implications involved. Furthermore, the

content of the AI training referred to in this study is unclear. If topics such as data security, algorithmic privacy, digital footprints, and data processing mechanisms were not addressed in depth, it is plausible that such training would not lead to significant differences in awareness.

Analyses conducted according to the frequency of AI use similarly showed that students' online privacy awareness did not significantly differ. The literature provides several studies supporting this finding. Karadaş and Kara (2021) and Töngel (2020) reported that years of social media use do not significantly predict online privacy awareness. Additional studies have also found that online privacy awareness does not vary according to individuals' social media use habits (Alsancak-Sırakaya & Sırakaya, 2022; Avcı & Kayıran, 2023; Gültekin, 2024; Karadaş & Kara, 2021; Sırakaya & Alsancak-Sırakaya, 2024). These studies collectively suggest that usage frequency alone is not a factor that increases privacy awareness; rather, awareness is more closely associated with digital literacy, knowledge of personal privacy, and security-related behaviors. Another explanation for the lack of significant differences in this study may be that students use AI technologies for superficial or routine purposes. Most popular AI tools—such as chatbots, summarizers, or content generators—do not provide users with information about data processing procedures, data storage policies, or algorithmic surveillance. Therefore, even if a user frequently interacts with AI tools, this experience may not necessarily enhance their understanding of privacy risks. The literature also notes that young people's technology use is often driven by practical needs, while issues related to security and privacy tend to remain secondary (Bayzan, 2025).

Another finding of this study indicated that university students' online privacy awareness did not significantly differ according to their level of trust in AI-generated responses. This suggests that individuals' trust in AI does not directly correlate with their level of online privacy awareness. Recent research demonstrates that while trust in technology can influence user behavior, its effects do not always extend to cognitively based constructs such as privacy awareness. Many studies argue that trust in technology is more strongly related to variables such as willingness to use, technology acceptance, and perceived usefulness, whereas its influence on deeper cognitive evaluations—such as privacy awareness—remains limited. Johnson and Verdicchio (2017) highlight that although trust in AI can shape user behavior, most users lack adequate understanding of AI's technical functioning, data processing mechanisms, or potential privacy risks. Thus, individuals' trust in AI responses is often perceptual in nature and may not align with real privacy judgments.

Similar findings in the literature support this conclusion. Research on online privacy awareness consistently suggests that individuals' risk perceptions, privacy behaviors, and levels of awareness are more strongly associated with digital literacy, personal data security knowledge, cybersecurity awareness, and online experience; trust in technology or platforms typically has only a limited effect (Karadaş & Kara, 2021; Töngel, 2020). In this respect, the lack of significant differences based on trust in AI responses may be interpreted as evidence that online privacy constitutes a deeper cognitive construct that is not solely influenced by perceived accuracy of technological outputs. However, the most notable finding in this context is that all participants believed that AI provides at least partially accurate answers. Whether this belief stems from students' superficial understanding of AI or from their actual experiences with AI technologies presents an important question for future research.

RECOMMENDATIONS

Based on the results obtained from the study, several recommendations can be proposed for future research. First, considering that university students exhibit a moderate level of online privacy awareness, it can be argued that there is a need for courses focusing on this topic. In particular, the low level of awareness in the communication/sharing sub-dimension indicates that university students require support regarding their social media use.

The finding that receiving AI education, frequency of AI use, and trust in AI responses do not lead to a significant difference in online privacy awareness suggests that these educational and usage processes remain largely superficial. In this regard, it is recommended that both university-level AI courses and related training programs be reconsidered in terms of their content. Furthermore, future studies may employ qualitative research methods to collect more in-depth data, allowing for a more detailed examination of this issue.

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Chapter 6

The Use of Artificial Intelligence in Turkish Language Education: Conceptual Approaches and Current Trends

Türkan YILDIRIM¹

Abstract

The aim of this study is to examine research on the use of artificial intelligence in Turkish language education from a holistic perspective, within the framework of conceptual approaches, pedagogical dimensions, methodological trends, and ethical debates. Adopting a qualitative research approach, the study employs a conceptual review method based on document analysis. The data source consists of peer-reviewed scholarly articles published between 2021 and 2025 that directly address the use of artificial intelligence in Turkish language education. The reviewed studies were analyzed through descriptive analysis and classified according to their conceptual frameworks, thematic foci, and methodological characteristics. The findings indicate that artificial intelligence in Turkish language education is predominantly addressed in relation to writing and speaking skills, particularly through applications of generative artificial intelligence, while studies focusing on reading and listening skills remain limited. In terms of teacher roles, artificial intelligence is positioned not as a substitute for the teacher but as a tool that supports pedagogical decision-making (Kayalar, 2021). Ethical dimensions are mainly discussed within the context of academic integrity, originality, and the risks of superficial learning. Methodologically, the reviewed studies are largely descriptive and based on opinions and attitudes, whereas experimental research and studies grounded in long-term implementations are relatively scarce. In this respect, the study highlights the need to address research on the use of artificial intelligence in Turkish language education in a more integrated manner across theoretical, pedagogical, and methodological dimensions.

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INTRODUCTION

Artificial intelligence (AI) technologies are currently regarded not merely as digital tools that support instruction in the field of education, but as structural agents of transformation that redefine learning processes, teacher roles, and pedagogical approaches. The marked increase in studies on artificial intelligence in education in Türkiye in recent years indicates that this transformation has gained strategic importance for the national education system. Indeed, in a content analysis of Türkiye-based studies on artificial intelligence in education, Tekin (2023) demonstrated that the vast majority of this research has been produced within the last five years, revealing that artificial intelligence has become an enduring theme in educational research. By its very nature, the field of Turkish language education constitutes a distinctive discipline that can be directly associated with artificial intelligence technologies. Language teaching relies on cognitive processes such as meaning construction, text production, feedback provision, speech recognition, and linguistic validation; therefore, artificial intelligence applications grounded in natural language processing offer significant opportunities for Turkish language education. Akkaya and Çıvğın (2021) emphasize that artificial intelligence can be directly linked to the four fundamental language skills in Turkish education and that audio-visual supported applications, in particular, enrich language learning processes. This perspective suggests that artificial intelligence in Turkish language education extends beyond a merely instrumental role and offers a structure that can be integrated into the very nature of the instructional process.

In recent years, the widespread adoption of generative artificial intelligence applications has marked a new turning point in the literature on Turkish language education. Studies focusing on chatbot-based tools, especially ChatGPT, indicate that artificial intelligence provides an interactive learning environment capable of delivering individualized feedback in writing, speaking, and text comprehension skills. Zileli (2023) notes that ChatGPT supports the learning process in teaching Turkish as a foreign language through functions such as engaging in dialogue, providing feedback on written expression, and generating practice activities. Similarly, Gün and Durmuş Öz (2024) highlight ChatGPT as an artificial intelligence tool that stands out in supporting content creation and instructional processes in Turkish language education.

However, research on the use of artificial intelligence in Turkish language education extends beyond pedagogical opportunities to encompass teachers' and pre-service teachers' attitudes, levels of awareness, and competencies related to this technology. Sarıkaya and Kavan (2024) found that pre-service Turkish language teachers' attitudes toward artificial intelligence were at a moderate level

and were significantly associated with their experience in using artificial intelligence and their level of knowledge. Banaz and Demirel (2024) reported that although pre-service teachers' artificial intelligence literacy levels were close to high, these levels varied according to variables such as gender, year of study, and access to information sources related to artificial intelligence. In addition to studies involving pre-service teachers, research conducted with in-service teachers and academics also demonstrates the multidimensional nature of artificial intelligence in Turkish language education. Karagöl and Yıldırım Bilgen (2025) revealed that artificial intelligence offers substantial contributions to the development of writing and speaking skills; nevertheless, it also brings risks such as superficial learning, ethical concerns, and ambiguity in professional roles. Köroğlu and Kana (2025) similarly emphasized that while pre-service teachers perceive artificial intelligence tools as useful, they also harbor concerns regarding the implications of these technologies for the future of the teaching profession. Studies examining Turkish language teacher candidates' levels of awareness of artificial intelligence applications further underscore the decisive role of the human factor in the field. Sevda İçöz and Erhan İçöz (2024) indicated that pre-service teachers' levels of awareness of artificial intelligence differ significantly across various demographic variables, suggesting that such differences may lead to risks of inequality in the integration of artificial intelligence. Collectively, these findings demonstrate that the integration of artificial intelligence into Turkish language education should be addressed not only from a technological perspective but also through pedagogical and socio-cultural dimensions.

When the existing studies on artificial intelligence in Turkish language education are examined, it is observed that research has predominantly focused on implementation examples, opinion and attitude studies, and levels of awareness and literacy. By contrast, review studies that systematically reveal the conceptual approaches through which artificial intelligence is addressed in the context of Turkish language education, identify the directions in which research trends have evolved, and evaluate the accumulated body of knowledge within a holistic framework remain limited (Akkaya & Çıvğın, 2021; Tekin, 2023). This situation leads to a theoretically fragmented development of research on the use of artificial intelligence in Turkish language education and causes practice-oriented studies to lack a shared conceptual foundation. Consequently, review studies that address the use of artificial intelligence in Turkish language education in an integrated manner—within the framework of conceptual approaches, pedagogical dimensions, ethical debates, and current research trends—have the potential to fill a significant gap in the field. An examination of research on artificial intelligence in Turkish language education further reveals that studies

largely concentrate on teachers' and pre-service teachers' opinions, attitudes, and levels of awareness (Sarıkaya & Kavan, 2024; Köroğlu & Kana, 2025; Banaz & Demirel, 2024). Moreover, recent studies focusing on generative artificial intelligence applications such as ChatGPT demonstrate that these technologies offer substantial pedagogical opportunities in Turkish language education, while simultaneously bringing issues such as ethical concerns and the risk of superficial learning to the forefront (Zileli, 2023; Gün & Durmuş Öz, 2024). However, the existing literature does not sufficiently clarify the conceptual foundations on which these studies are based, how artificial intelligence is positioned within the context of Turkish language education, or how the overall trends in research form a coherent whole. This lack of clarity results in a theoretically fragmented knowledge base and prevents the development of a shared framework guiding research in the field. Therefore, there is a clear need for a review study that examines the use of artificial intelligence in Turkish language education through the lenses of conceptual approaches and current research trends.

In this context, the main research question of the study is formulated as follows:

“Within which conceptual approaches and current trends is the use of artificial intelligence in Turkish language education addressed in the existing research?”

Based on this main problem, the sub-research questions of the study are as follows:

1. On which conceptual and pedagogical approaches are studies on the use of artificial intelligence in Turkish language education grounded?
2. How do existing studies portray the role of artificial intelligence in Turkish language education in terms of language skills, teacher roles, and ethical dimensions?
3. What are the methodological and thematic trends of research on artificial intelligence in Turkish language education?

Method

Research Design

This study was designed as a review (conceptual) study based on document analysis, which is one of the qualitative research approaches. Document analysis is a qualitative method that aims to systematically collect, examine, classify, and interpret written sources in line with a specific research problem (Bowen, 2009; Yıldırım & Şimşek, 2021). In review studies, this method enables the conceptual analysis of the existing body of knowledge in the field and allows research trends to be identified from a holistic perspective. Given the increasing number of studies on the use of artificial intelligence in Turkish language education in recent

years and the diversification of research orientations, a review approach grounded in conceptual synthesis was adopted in this study rather than an experimental or practice-based design. This approach makes it possible to evaluate not only the outcomes of existing studies but also their underlying conceptual frameworks, thematic foci, and methodological tendencies in an integrated manner (Akkaya & Çıvğın, 2021; Tekin, 2023).

Data Sources and Selection of Documents

The data source of the study consists of peer-reviewed scholarly articles that directly address the use of artificial intelligence in Turkish language education. The documents were selected from studies that examine conceptual discussions, implementation examples, and teachers' and pre-service teachers' opinions, attitudes, levels of awareness, and literacy related to artificial intelligence in the field of Turkish language education.

The following criteria were used in selecting the documents:

- The study is directly related to the field of Turkish language education / Turkish language teaching,
- It addresses the use of artificial intelligence from pedagogical, conceptual, and/or ethical perspectives,
- It is published in peer-reviewed academic journals,
- Its full text is accessible,
- It reflects the current literature (2021–2025).

In line with these criteria, the selected studies were diversified to include review, qualitative, quantitative, and descriptive research designs, and a data set was constructed to reflect the overall landscape of research on the use of artificial intelligence in Turkish language education.

Data Analysis

The documents obtained in the study were analyzed using a descriptive analysis approach. Descriptive analysis involves the organization, classification, and interpretation of data in accordance with predetermined themes (Yıldırım & Şimşek, 2021). In this study, the analysis process was conducted through the following stages:

1. All studies included in the review were read in detail.
2. The purposes of the studies, the artificial intelligence applications they addressed, and the dimensions on which they focused were identified.
3. Based on the data obtained, a conceptual framework was constructed.
4. The studies were thematically classified under the following headings:

- The conceptualization of artificial intelligence in Turkish language education,
- The ways in which artificial intelligence is associated with language skills,
- The roles of teachers and pre-service teachers,
- Ethical and pedagogical debates,
- Research trends.

During the analysis process, comparisons were made across studies to identify similarities and differences, and the findings were interpreted within a holistic conceptual structure in line with the purpose of the research.

Validity and Reliability

To ensure the validity of the study, explicit and restrictive criteria were established for document selection, and only studies that directly addressed artificial intelligence in the field of Turkish language education were included in the review. In addition, by incorporating different types of research (review, qualitative, and quantitative), the study aimed to ensure that the findings reflect the overall trends in the field.

With regard to reliability, the analysis process was conducted systematically, and the documents were read multiple times and consistently categorized under the identified themes. The contents of the studies were reported through paraphrasing rather than direct quotation, thereby ensuring consistency with the original sources while minimizing the risk of plagiarism. During the coding and thematization process, similar contents were integrated, and non-overlapping cases were re-evaluated to refine and clarify the analysis.

Ethical Considerations

As this study is based on document analysis and does not involve the collection of data from human participants, it is not subject to ethical committee approval. Throughout the research process, scientific and ethical principles were adhered to, and all sources consulted were cited in accordance with APA 7 guidelines.

Findings Related to the First Sub-Problem

Conceptual and Pedagogical Approaches to the Use of Artificial Intelligence in Turkish Language Education

An examination of studies addressing the use of artificial intelligence in Turkish language education reveals that research positions artificial intelligence

not merely as a technical innovation but as a pedagogical structure intrinsically related to the nature of language teaching. In this context, artificial intelligence is conceptualized as a system that supports language learning processes, interacts with learners, and provides feedback. Akkaya and Çıvğın (2021) emphasize that artificial intelligence in Turkish language education is directly associated with the four fundamental language skills and is integrated into instruction particularly through language processing processes. This perspective indicates that artificial intelligence is addressed not as an instrumental add-on but as a pedagogical component embedded in the functioning of the learning process in Turkish language education. One of the prominent conceptual frameworks emerging from the reviewed studies is the view that artificial intelligence serves a supportive and individualized function in learning processes. AI-based applications are regarded as pedagogically valuable in that they can provide immediate feedback on students' language production, enhance error awareness, and adapt to learners' individual learning pace. Studies focusing especially on generative artificial intelligence applications demonstrate that these technologies facilitate active language use in students' writing and speaking skills and offer a learner-centered learning environment (Zileli, 2023; Gün & Durmuş Öz, 2024). This finding suggests that artificial intelligence in Turkish language education is associated not with behaviorist approaches but with learner-centered and process-oriented pedagogical perspectives. Another pedagogically significant finding is that the use of artificial intelligence is conceptualized not as a structure that replaces the teacher, but as a support system that requires teacher guidance. Studies conducted with teachers and pre-service teachers indicate that the effective use of artificial intelligence applications is directly related to teachers' pedagogical competencies (Sarıkaya & Kavan, 2024; Banaz & Demirel, 2024). This perspective aligns with the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the integrated consideration of technology, pedagogy, and content knowledge (Mishra & Koehler, 2006). Although studies on artificial intelligence in Turkish language education do not explicitly reference this model, their implicit assumptions that technology should serve pedagogical purposes demonstrate consistency with this framework.

A substantial number of studies also associate artificial intelligence with an interaction-based understanding of learning. Applications implemented through chatbots, in particular, enable students to use language not merely as passive recipients but as active producers (Kayalar, 2021). Gün and Durmuş Öz (2024) report that such interaction supports students' active engagement in written and oral expression processes. This finding indicates that the use of artificial intelligence in Turkish language education is compatible with constructivist

learning theory and facilitates learners' active construction of knowledge. At the same time, the reviewed studies address pedagogical approaches not only in terms of opportunities but also within the framework of limitations and ethical considerations. Research conducted with teachers and academics raises concerns that the uncontrolled use of artificial intelligence in learning processes may lead to superficial learning and weaken students' responsibility for thinking (Karagöl & Yıldırım Bilgen, 2025). This concern highlights the necessity of using artificial intelligence in Turkish language education in a pedagogically cautious manner, with clearly defined boundaries and under teacher guidance. Overall, the findings indicate that studies on the use of artificial intelligence in Turkish language education frame this technology within pedagogical approaches that are compatible with the nature of language teaching, learner-centered, interaction- and feedback-based, and grounded in teacher guidance. However, it is also noteworthy that these approaches are largely shaped by implementation examples and opinion-based evidence, and that explicit, systematic, and theoretically grounded pedagogical model proposals remain limited. This finding suggests that the conceptual depth of research on the use of artificial intelligence in Turkish language education represents an area in need of further development.

Findings Related to the Second Sub-Problem

The Role of Artificial Intelligence in Turkish Language Education in Terms of Language Skills, Teacher Roles, and Ethical Dimensions

Existing research indicates that the use of artificial intelligence in Turkish language education presents a non-homogeneous picture in terms of language skills, teacher roles, and ethical dimensions, with concentrations in certain areas and pedagogical boundaries that have not yet been clearly defined. The reviewed studies conceptualize artificial intelligence as a potential support tool in Turkish language education; however, this potential is approached with caution regarding its areas of use, pedagogical effects, and ethical implications. With respect to language skills, the findings reveal that the use of artificial intelligence in Turkish language education is predominantly centered on writing skills. Studies focusing particularly on generative artificial intelligence applications demonstrate that these technologies are employed in written expression processes through functions such as text generation, grammatical revision, lexical choice, and feedback provision (Zileli, 2023; Gün & Durmuş Öz, 2024). This pattern suggests that writing is the language skill most amenable to artificial intelligence applications in both instructional and assessment contexts. Nevertheless, it is noteworthy that the use of artificial intelligence in writing is largely addressed from a product-oriented perspective, while the cognitive and metacognitive

dimensions of the writing process receive relatively limited attention. In the context of speaking skills, artificial intelligence is primarily examined through interaction- and dialogue-based applications. Practices implemented via chatbots enable learners to engage with the target language; however, it is emphasized that such interaction often remains at the level of written simulation and represents authentic spoken communication only to a limited extent. By contrast, studies addressing artificial intelligence-based applications for reading and listening skills are considerably fewer in number. Although Akkaya and Çıvğın (2021) underline the relationship between artificial intelligence and the four fundamental language skills, they also point out that applications are predominantly concentrated on productive skills. This finding indicates an imbalanced distribution in the use of artificial intelligence across language skills in Turkish language education.

From the perspective of teacher roles, existing research positions artificial intelligence not as a substitute for the teacher but as a tool that supports teachers' pedagogical decision-making. Studies based on the views of teachers and pre-service teachers show that the effective use of artificial intelligence applications is directly related to teachers' awareness of technology, pedagogical competence, and guidance role (Sarıkaya & Kavan, 2024; Banaz & Demirel, 2024). This underscores that the use of artificial intelligence cannot be considered independently of its pedagogical context and that the teacher's role continues in a transformed form. At the same time, teachers' and pre-service teachers' attitudes toward artificial intelligence are generally characterized as cautious and critical. While artificial intelligence is perceived as a tool that facilitates instructional processes, concerns are also expressed regarding the nature of the teaching profession, the distribution of pedagogical responsibilities, and professional identity (Köroğlu & Kana, 2025). This finding suggests that artificial intelligence has the potential to redefine teacher roles in Turkish language education, yet this transformation has not been fully articulated at the pedagogical and theoretical levels. Ethical dimensions constitute one of the most salient areas of findings in research on the use of artificial intelligence in Turkish language education. Qualitative studies conducted with teachers and academics reveal concerns that artificial intelligence applications may foster tendencies toward reliance on ready-made outputs, superficial learning, and a decline in original production among students (Karagöl & Yıldırım Bilgen, 2025). These concerns are particularly pronounced in relation to writing skills, where AI-assisted text generation may overshadow students' processes of thinking, planning, and expression.

Ethical issues such as academic integrity, data security, and ownership of AI-generated texts also emerge as common findings across studies. Questions regarding how AI-generated content should be assessed, whether such content accurately reflects students' actual language proficiency, and the role of these outputs within instructional processes are viewed as ethically contentious areas. Accordingly, there is a shared tendency in the literature to emphasize that the use of artificial intelligence should be bounded by pedagogical principles and implemented under teacher supervision. Overall, existing research demonstrates that artificial intelligence in Turkish language education is characterized by a production-oriented focus in terms of language skills, a guidance-based orientation in terms of teacher roles, and a critical and cautious stance with respect to ethical dimensions. However, it is also evident that these three dimensions are rarely addressed within a unified pedagogical framework, and that the relationships among language skills, teacher roles, and ethical principles are often examined in a fragmented manner. This situation clearly highlights the need for more holistic, theoretically grounded, and pedagogically informed research on the use of artificial intelligence in Turkish language education.

Findings Related to the Third Sub-Problem

Methodological and Thematic Trends in Studies on Artificial Intelligence in Turkish Language Education

An examination of existing studies on artificial intelligence in Turkish language education reveals that research displays clear patterns in both methodological preferences and thematic orientations. The findings indicate that studies in the field tend to concentrate on particular research designs and themes, while certain areas remain relatively underexplored. From a methodological perspective, a substantial proportion of research on artificial intelligence in Turkish language education is characterized by descriptive and predominantly qualitative designs. Qualitative studies examining the views of teachers, pre-service teachers, and academics, together with quantitative survey research focusing on attitudes, awareness, and literacy levels, constitute the dominant methodological approaches in the field (Sarıkaya & Kavan, 2024; Banaz & Demirel, 2024; Karagöl & Yıldırım Bilgen, 2025). This tendency can be attributed to the relatively recent emergence of artificial intelligence as a research topic in Turkish language education, with researchers initially prioritizing the exploration of perceptions, attitudes, and levels of readiness toward this technology. In contrast, experimental or quasi-experimental designs appear to be limited in number. The scarcity of long-term, controlled, and comparative experimental studies aimed at directly measuring the effects of artificial

intelligence applications on Turkish language education represents a significant methodological gap in the field. The reviewed studies indicate that findings related to the use of artificial intelligence are largely based on subjective evaluations and participant perceptions, while evidence derived from implementation-based research remains limited (Akkaya & Çıvğın, 2021; Gün & Durmuş Öz, 2024).

Studies based on reviews and document analysis are also relatively scarce. However, given the rapid increase in publications in the field, the need for review studies that offer conceptual frameworks and systematically analyze methodological trends has become increasingly apparent. This observation constitutes an important finding that supports the problem statement of the present study. With respect to thematic trends, research on artificial intelligence in Turkish language education is largely concentrated around specific themes. A significant proportion of studies address artificial intelligence in relation to teachers' and pre-service teachers' attitudes, levels of awareness, and literacy (Sarıkaya & Kavan, 2024; Banaz & Demirel, 2024). This thematic emphasis suggests that the human factor is regarded as a decisive element in the integration of artificial intelligence into Turkish language education. In recent years, there has also been a noticeable thematic shift toward generative artificial intelligence applications, particularly chatbot-based systems such as ChatGPT. These studies primarily examine the effects of artificial intelligence on writing and speaking skills through interaction and feedback processes (Zileli, 2023; Gün & Durmuş Öz, 2024). Nevertheless, this thematic concentration appears to overshadow other potential areas of artificial intelligence use in Turkish language education. When thematic trends are considered in relation to language skills, the findings indicate a strong focus on writing skills, while artificial intelligence-based research addressing reading, listening, and grammar instruction remains relatively limited. Although Akkaya and Çıvğın (2021) argue that artificial intelligence can be associated with all language skills, the predominance of applications targeting productive skills points to a thematic imbalance in the field. Ethical dimensions have also become increasingly visible as a thematic area in recent years. Studies focusing particularly on the views of teachers and academics highlight that the use of artificial intelligence entails risks related to academic integrity, originality, student responsibility, and pedagogical supervision (Karagöl & Yıldırım Bilgen, 2025). However, in most studies, ethical issues are addressed as secondary themes, and systematic models grounded in ethical principles have yet to be developed. Overall, the findings demonstrate that research on artificial intelligence in Turkish language education tends to be methodologically descriptive and opinion-based, and thematically oriented toward attitudes,

writing skills, and generative artificial intelligence applications. Conversely, experimental studies, long-term implementations, research encompassing a broader range of language skills, and theoretically grounded models that place ethical considerations at the center remain limited. This clearly indicates the need for deeper and more diversified research in the field.

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

The findings of this review study reveal that research on the use of artificial intelligence in Turkish language education demonstrates certain tendencies in conceptual, pedagogical, methodological, and ethical terms. While artificial intelligence has increasingly become a prominent area of interest in Turkish language education, the findings indicate that this interest has not yet developed into a holistic, balanced, and theoretically deepened framework. The findings related to the first sub-problem show that artificial intelligence in Turkish language education is generally addressed within pedagogical approaches that are compatible with the nature of language teaching. As emphasized by Akkaya and Çıvğın (2021), artificial intelligence is positioned as a natural language processing-based technology and is associated with the four fundamental language skills in Turkish language education. However, the findings indicate that this conceptualization remains implicit in most studies, and that explicit and systematic pedagogical model proposals are limited. This suggests that although artificial intelligence applications are pedagogically adopted, this adoption has not yet attained sufficient theoretical depth. Findings related to the second sub-problem indicate that artificial intelligence presents an imbalanced profile in Turkish language education with respect to language skills. The strong focus of existing studies on writing and speaking skills may be attributed to the pedagogical ease with which artificial intelligence functions directly related to productive language use can be implemented (Zileli, 2023; Gün & Durmuş Öz, 2024). However, the limited number of studies addressing reading and listening skills suggests that the potential of artificial intelligence in Turkish language education is being evaluated through a restricted range of skills. This tendency may be regarded as inconsistent with the holistic nature of language teaching. When discussed in terms of teacher roles, the findings demonstrate that artificial intelligence is not conceptualized as a substitute for teachers but rather as a tool that supports teachers' pedagogical decision-making. The generally cautious attitudes of teachers and pre-service teachers toward artificial intelligence (Sarıkaya & Kavan, 2024; Banaz & Demirel, 2024) indicate that this technology is not perceived as fully assuming pedagogical responsibilities. This finding is significant in that it highlights the continued dominance of approaches that place

teacher guidance at the center of Turkish language education. However, the limited availability of clear pedagogical models specifying how this guidance role should be structured suggests that practices remain largely dependent on individual preferences.

Ethical dimensions constitute one of the most salient areas of discussion. As demonstrated by Karagöl and Yıldırım Bilgen (2025), the use of artificial intelligence in Turkish language education entails risks related to academic integrity, originality, and superficial learning. The findings show that these ethical concerns are articulated in nearly all studies; however, they are often treated as secondary themes. The lack of holistic models that place ethical principles at the core of pedagogical design increases the risk that artificial intelligence applications may deviate from educational objectives. The findings related to the third sub-problem further reveal notable methodological and thematic limitations in studies on artificial intelligence in Turkish language education. The predominance of descriptive, opinion-based, and survey-oriented research designs, together with the limited number of experimental and long-term implementations, suggests that the existing body of knowledge is shaped primarily at the level of perceptions and attitudes. This raises concerns that the actual pedagogical effects of artificial intelligence in Turkish language education have not yet been sufficiently measured. Similarly, the thematic concentration on writing skills and generative artificial intelligence applications has resulted in the relative neglect of other potential research areas within the field.

Overall, the discussion indicates that the use of artificial intelligence in Turkish language education represents a field with considerable potential but one that has not yet reached pedagogical and theoretical maturity. Existing studies tend to embrace artificial intelligence as an innovative tool; however, they struggle to provide clear answers regarding how, to what extent, and within which boundaries this technology should be integrated into language teaching. This situation underscores the need for future research on artificial intelligence in Turkish language education to focus not only on implementation examples but also on theoretical foundations, ethical principles, and methodological diversity. In this review study, existing research on the use of artificial intelligence in Turkish language education was examined from a holistic perspective encompassing conceptual, pedagogical, methodological, and ethical dimensions. The findings indicate that although artificial intelligence has become an increasingly prominent area of interest in Turkish language education, this interest has not yet evolved into a theoretically deepened, pedagogically balanced, and methodologically diversified structure.

The results of the study suggest that artificial intelligence in Turkish language education is generally conceptualized as a technology compatible with the nature of language teaching. AI-based applications, particularly those grounded in natural language processing, are most prominent in productive language skills such as writing and speaking, where they are regarded as pedagogical tools that support learning processes and provide feedback. Nevertheless, the limited focus on reading and listening skills indicates that the distribution of artificial intelligence applications across language skills remains unbalanced. With regard to teacher roles, the study concludes that artificial intelligence is not perceived as replacing teachers in Turkish language education, but rather as a tool that supports teachers' pedagogical decision-making. Although teachers and pre-service teachers view artificial intelligence as a technology that facilitates instructional processes, they also display a cautious stance concerning its implications for pedagogical responsibilities and professional roles. This finding demonstrates that the use of artificial intelligence in Turkish language education necessitates teacher guidance and pedagogical supervision.

One of the most important conclusions of the study is the clear prominence of ethical concerns related to the use of artificial intelligence in the Turkish language education literature. Issues such as academic integrity, originality, superficial learning, and students' responsibility for thinking highlight the need to define the pedagogical boundaries of artificial intelligence applications. However, existing research generally addresses these ethical dimensions as secondary themes and remains insufficient in offering systematic models grounded in ethical principles. From a methodological perspective, studies on the use of artificial intelligence in Turkish language education are predominantly descriptive, opinion-based, and grounded in survey or review designs. The limited number of experimental, quasi-experimental, and long-term intervention studies makes it difficult to reveal the effects of artificial intelligence on Turkish language education in a comprehensive and in-depth manner. Similarly, the thematic concentration on writing skills and generative artificial intelligence indicates a need for greater diversification in research foci within the field. In conclusion, although the existing literature on the use of artificial intelligence in Turkish language education highlights the pedagogical potential of these technologies, it also reveals significant areas that require further development in terms of theoretical grounding, methodological diversity, and ethical integrity. In order to ensure the effective, balanced, and sustainable integration of artificial intelligence into Turkish language education, future research should be designed with methodological rigor, grounded in ethical principles, centered on the teacher's role, and encompassing all language skills. In this respect, the present study

provides a conceptual framework for research on artificial intelligence in Turkish language education and offers guidance for future studies in the field.

The following recommendations are proposed based on the findings of the study:

1. Learning outcomes that explicitly define the pedagogical and ethical use of artificial intelligence should be incorporated into Turkish language curricula; in particular, the purposes for which artificial intelligence-supported processes may be employed in writing and speaking skills should be clearly specified.
2. Practice-oriented in-service and undergraduate-level training programs should be organized for Turkish language teachers and preservice teachers on the use of artificial intelligence in lesson design, feedback, and assessment and evaluation processes.
3. Artificial intelligence tools should be integrated into classroom practices not as applications that generate texts on behalf of students, but as supportive tools that facilitate the writing process through drafting, feedback, and text development.
4. Assessment and evaluation processes should be restructured in ways that enable the differentiation of artificial intelligence-assisted productions; instead of product-oriented approaches, process-based assessment methods that foreground students' cognitive responsibility should be promoted.
5. Clear ethical guidelines encompassing principles of academic integrity, originality, and responsibility regarding the use of artificial intelligence in Turkish language courses should be established, and students should be required to transparently disclose their use of artificial intelligence tools.
6. To more robustly demonstrate the effects of artificial intelligence in Turkish language education, experimental and long-term applied studies that extend beyond writing skills to include reading and listening skills should be encouraged.

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Chapter 7

A Comprehensive Look at the 5E and 7E Models within the Constructivist Approach Framework

Mehmet DEMİRHAN¹

1. INTRODUCTION

Today, the goal of education is to create a model of a person who knows how and where to find and use information, recognizes their own learning methods and uses them effectively, and utilizes their prior knowledge to generate new information. This is only possible with individuals who learn how to learn, are inquisitive, utilize the information they research, have developed thinking and perception skills, are creative, can use knowledge creatively, can interpret correctly, question, and solve problems (Ergin, 2006).

The constructivist learning theory is a theory related to knowledge and learning and is based on building knowledge from the ground up. The aim is for learners to construct new topics to be learned based on their past experiences, knowledge, skills, and attitudes (Demirel, 2017). The 5E and 7E teaching models were created for the purpose of applying constructivist theory in the educational environment. The 5E model, developed by Roger Bybee in the 1980s, is the most preferred model. The model is inquiry-based and empowers educators to create effective lesson plans. The 5E model consists of the following stages: engage-enter, exploration, explanation, elaboration, and evaluation (Bybee et al., 2006).

2. CONSTRUCTIVIST APPROACH

The constructivist learning theory was developed by Piaget, Vygotsky, Bruner, Dewey, and Wittrock, and its roots can be traced back to philosophers such as Vico and Kant. Constructivism developed as a theory concerned with understanding the learning process, but over the years it has become an approach related to how people construct knowledge. When approached from different angles, constructivism can be defined as a learning theory that explains how people learn and the learning process, a philosophy of epistemology, and

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an approach related to how people construct knowledge for themselves (Eycan, 2025).

Constructivism has begun to be used in the organization of teaching programs for different subjects in our country. However, simply preparing lesson plans or textbooks according to the constructivist theory is not sufficient for the application of this theory. Undoubtedly, the greatest responsibility falls on the teacher who will apply this theory in the classroom. In-service training should be provided to teachers on this theory, and if necessary, courses should be organized to break down teachers' preconceptions about the new teaching approach and explain the essence of the theory (Öztürk, 2008).

Constructivism establishes a strong link between the environment and the human brain. In the constructivist learning approach, the fundamentals are researching, interpreting, and analyzing information, developing the thinking process, and integrating past experiences with new experiences (Ercan Özeydin, 2010). Constructivism incorporates discussions, group work, brainstorming, and educational games (Sönmez, 2017).

The 5E and 7E models are also based on a constructivist interpretation. In this model, students re-know, learn, reorganize, think, and modify their initial conceptualizations. They do this through their interactions with their environment, classroom activities, and experiences. Learners interpret concepts and events, forming their own interpretations using concepts from their own knowledge base. Therefore, it is always possible to change the concepts they have learned or take them further by showing them that what they have learned so far is insufficient and changing it (Ergin, 2006).

3. THE 5E MODEL

The name of the 5E constructivist approach model comes from the initial letters of the stages in its content. Each “E” letter indicates a different stage (Çepni et al., 2000). These stages are:

- Engagement
- Exploration
- Explanation
- Elaboration
- Evaluation

4. STAGES OF THE 5E MODEL

First, the curiosity-arousing stage is a new stage where teachers assess students' prior knowledge and encourage them to show interest in the subject. In the second discovery stage, teachers ask questions that encourage students to

explore. In the process of finding answers to their questions, students participate in various practical and mental activities. This stage is similar to the research stage of the learning cycle, where students are encouraged to explore. In the third stage, the explanation stage, teachers encourage students to explain the concept and relate it to the ideas they learned in the discovery stage. Students are asked to discuss their research findings, and the teacher and students together provide the necessary explanation on the topic. This stage is similar to the concept introduction stage of the learning cycle because it gives students the opportunity to explain their ideas. In the fourth extension stage, the teacher gives students the opportunity to relate the new information they have acquired to situations they encounter in daily life. This stage corresponds to the concept application stage of the learning cycle because it encourages students to make connections and apply what they have learned. Finally, the evaluation stage is a stage where teachers assess students' understanding of concepts and their development (Salar, 2018).

Engagement phase: During the engagement phase, various educational activities are carried out to reveal learners' knowledge about the subject, capture their attention, and encourage them to think about learning objectives (Rodriguez et al., 2019). No subject matter is presented to students during the engagement phase. The topic to be learned is not disclosed (Öztürk, 2008). It is a process in which students' attention is sought, they are encouraged to think about the topic or problem, and they are asked motivating questions to access their prior knowledge (İlter, 2013).

This stage is student-centered. The teacher plays a passive role, acting as a facilitator, giving instructions for the experiment, activity, or field trip to be carried out, then observing and listening to the students. The teacher helps students observe and collect data. The teacher asks students questions, encouraging them to think and make comments (Bell & Odom, 2013). The entry phase usually occurs at the beginning of the lesson, but this is not always the case. For example, Participation can be structured through an assignment that must be submitted immediately before starting a new conceptual unit. This assignment could be a reading from popular press, a website to explore, or a video to watch (Tanner, 2010).

Exploration phase: The goal of this phase is to connect the information activated in the introductory phase with new information. This is the phase where learners generate ideas about the topic, discover problems and possibilities, examine events, make observations, explanations, and comments, and in some cases, conduct laboratory activities (Ruiz Martin & Bybee, 2022). At this stage, the teacher should facilitate safe, guided, and open research

experiences and questions to reveal learners' misconceptions about understanding (Wilder & Shuttlesworth, 2005).

This stage guides students in acquiring regular and meaningful information, while also encouraging them to research and question. Students attempt to discover concepts through experimental modeling within a specific context. In particular, questions such as “How?” or “Why?” are asked to ensure that students use their questioning and research skills (Özmen, 2004). Here, educators create situations where students struggle with a problem and try to understand the subject on their own or in groups. Students often encounter confusion, conflicting ideas, or unanswered questions at this stage. Discovery is an opportunity for students to engage in metacognitive thinking; that is, it is a chance for students to think about what they understand and do not understand conceptually about the subject and to identify gaps in their understanding. It provides an opportunity to increase students' interest, raise their need to know, and encourage them to ask questions (Tanner, 2010).

Explain phase: Learners are given the opportunity to present the work they did in the previous phase, their conceptual knowledge, and their skills under the guidance of the educator (Bybee et al., 2006). Representatives from the small groups formed during the discovery phase explain their findings to the class, creating an environment for discussion. The explanation phase is the teacher-centered phase in the 5E model. This is because the teacher is active in this phase, correcting any errors in the students' findings and filling in any gaps in their knowledge (Öztürk, 2008).

The teacher guides students when they get stuck or have difficulty finding new ways of thinking. The explanation phase is the phase that reconstructs the results of the previous phases. To this end, the teacher ensures that students connect with their experiences in the “Introduction” and “Exploration” phases and directs their attention to the previous phases (Bybee et al., 2006).

This is a time when teachers can address questions, confusion, and ideas that arise during the discovery process with their students. Research on learning shows that after preparing their minds during the discovery phase, students are more likely to experience questions and confusion that can make lessons more meaningful, interactive, and participatory (Tanner, 2010).

Elaboration phase: This is the stage where learners apply their knowledge of the subject in different areas. Learners demonstrate higher-order thinking skills related to the subject and apply the knowledge to everyday life (Polanin et al., 2024). In this stage, students working in small groups are now in the process of completing the problem being solved. The groups make presentations and explanations reporting on the final situation they have reached (Öztürk, 2008).

At this stage, the teacher demands more accuracy and responsibility from students in applying new knowledge to relevant facts. They encourage students to use formal terms and definitions and demonstrate their understanding in new situations. They challenge and strive to develop their conceptual understanding and skills. They provide opportunities for students to apply their understanding of the concept through additional activities (Özmen, 2004).

Evaluation phase: The evaluation phase encourages learners to evaluate their own learning processes (Sönmez, 2017). In the evaluation phase, various assessments are conducted to reveal the knowledge that students have constructed. They are asked to answer oral questions, write short summaries, fill in silent maps, read graphs, and evaluate tables. They may also be asked to establish connections between their learning and their daily lives (Öztürk, 2008).

The evaluation phase is also an important opportunity for students to use their self-assessment skills. As students and teachers strive to monitor progress in reaching new understandings throughout the process, assessment will be repeated (Ruiz Martin & Bybee, 2022). During assessment, teachers provide students with opportunities to reflect on and demonstrate their level of understanding or mastery of the concepts and skills covered. Assessment may take the form of a classroom exam or test, but it is not limited to these. Assessment may involve the development and/or presentation of a product, such as a poster reporting on a laboratory investigation, a brochure informing others about the biological basis of a disease, or a final assignment involving a critical analysis of a research journal article (Tanner, 2010).

6. 7E MODEL

Among today's teaching models, the BSCS 5E model, which has proven its effectiveness and is widely preferred, has been expanded by Eisenkraft (2003) with new additional stages, and its extended form, the “7E Model,” has taken its place in the literature. In the 7E model, the stage of eliciting prior knowledge has been added before the engage stage, which is the first stage in the 5E model, and the extend stage has been added after the evaluate stage, which is the final stage. The intermediate stages have been retained (Çolak, 2014). Eisenkraft (2003) modeled the comparison between 5E and 7E as follows.

Comparison of 5E and 7E Models

Stage	5E Model	7E Model
1st Stage	Engage	Elicit
2nd Stage	Explore	Engage
3rd Stage	Explain	Explore
4th Stage	Elaborate	Explain
5th Stage	Evaluate	Elaborate
6th Stage	-	Evaluate
7th Stage	-	Extend

Eliciting prior knowledge: In this expanded 7E model, proposed based on the 5E model, the aim is not to swap the components of eliciting prior knowledge (elicit) and engaging interest (engage). The engaging interest component is a necessary part of good teaching. The goal is to continue to engage and excite students in all possible ways to determine their prior knowledge (Eisenkraft, 2003).

Relate/Extend: Eisenkraft added this extension phase at the end, aiming to apply the gains to new situations and different disciplines. Teachers should ask questions and facilitate the sharing of ideas between groups so that students can recognize the relationship between the information they have acquired and its meaning in other areas. This ensures that the information to be learned has a place in real life and can be easily transferred when encountering a new situation (Eisenkraft, 2003).

7. THE ROLE OF THE TEACHER IN THE 5E AND 7E MODELS

Teachers have roles to adopt and assume at every stage of the 5E and 7E models. In this context, the teacher roles for each stage are detailed below.

The Role of the Teacher in the Introduction Phase: Above all, a teacher must ensure that students participate in the learning environment during the introduction phase. Students must mentally focus on a problem, a situation, or an event. Activities carried out in this section should always refer to past and future activities and be carried out by establishing connections with these activities. These connections can be conceptual, procedural, or behavioral. For example, asking a question, identifying a problem, or comparing students with a different event are all activities that will enable students to focus on and participate in the teaching

process. The teacher's role is to present the situation and relate it to the teaching process. While doing this, they must also present the rules and procedures (Kanlı, 2007). The teacher must spark interest in the subject, ask questions related to misconceptions, and encourage students to think like scientists (Kanlı & Yağbasan, 2008).

The Teacher's Role in the Discovery Phase: The primary task of the teacher in this phase is to facilitate. They give students the maximum amount of time they can work, observe and listen to them. They encourage students to work in groups and individually, asking comprehensive questions to make them repeat what they have learned (Bybee, 2010). They create rubrics that will assess skills such as forming hypotheses by ensuring that students record the data they obtain correctly. They are expected to play the role of a good counselor by asking focused questions (Kanlı & Yağbasan, 2008).

The Teacher's Role in the Explanation Stage: The teacher is more active than in other stages. They provide explanations and definitions related to concepts and topics. While doing so, they introduce new concepts and ask students for various explanations (Bybee, 2010). They encourage students to explain concepts and topics and indicate that they should use the data they have obtained to make logical explanations (Kanlı & Yağbasan, 2008).

The Teacher's Role in the Elaboration Stage: They expect students to use the definitions and concepts they have acquired/learned. The teacher asks students questions that remind them of their knowledge and data, expecting them to transfer it to the new situation (Bybee, 2010). While doing so, the teacher encourages students and uses motivating phrases (Kanlı & Yağbasan, 2008).

The Teacher's Role in the Relating Stage: Relates the concepts previously learned by the student to other subjects and topics. Asks guiding questions to contribute to the student's relating process (Bybee, 2010). Facilitates this relating process by providing guidance (Kanlı & Yağbasan, 2008).

The Teacher's Role in the Exchange/Sharing Phase: Provides opportunities for students to share the knowledge they have acquired about topics and concepts with other students. The teacher prepares the environment necessary for the exchange of ideas to be effective (Bybee, 2010). By facilitating interaction between groups, the teacher brings students' ideas face to face (Kanlı & Yağbasan, 2008).

The Teacher's Role in the Evaluation Phase: Evaluates the knowledge and skills acquired/learned by students. In doing so, asks students to evaluate themselves and their group peers. Observes whether the concepts learned are being applied and tries to understand what students have learned about the subject by asking open-ended questions (Bybee, 2010). They try to learn why students behave

and think the way they do by investigating the reasons for changes in their behavior and thinking (Kanlı & Yağbasan, 2008).

8. CONCLUSION

According to the constructivist approach, the starting point for students in the process of making sense of new information is their existing ways of thinking. For this reason, during instruction, students should be asked questions that reveal their existing thought patterns, and they should be asked to make predictions and interpret scientific ideas or experimental results. During these activities, students use their existing thought patterns and become aware of the adequacy of these thought patterns in explaining the situation in question (Ercan Özaydın, 2010).

Since an important benefit of constructivist learning is knowing how one knows, experiences should be organized to enable students to explain the path they choose when solving a problem and to demonstrate their ability to analyze the process of constructing knowledge. In the constructivist learning process, students should be aware of their own cognitive processes, regulate these processes, and analyze the effectiveness of the learning strategies they use during learning activities (Demirel, 2010).

As the positive effects of the constructivist approach in the education and training process became apparent, new learning models were developed within the framework of this approach. Among these models, learning models and methods such as 5E and 7E have been developed (Güneş Koç, 2013). When the relevant literature is evaluated, it is seen that models such as 5E and 7E are frequently used with experimental methods in order to reveal the effectiveness of constructivist theory. Therefore, the increased adoption of constructivist theory-based teaching strategies such as the 5E and 7E approaches in teaching programs will contribute to students' more active participation in the learning process and their scientific thinking skills (Sözer, 2025).

Constructivist theory does not view the learning-teaching process as a passive transfer of knowledge, but rather as a process in which the individual actively participates. The teacher acts as a coach, guiding the learning process and helping students build new knowledge based on what they have learned from their previous experiences. The 5E and 7E learning models are also constructivist approaches that are consistent with constructivist theory and make students active in the learning process. The models detailed above equip students with skills such as problem solving, critical/creative thinking, collective action, collaboration, and transferring the knowledge and experience they have learned to daily life. Therefore, educators should ensure that each student encounters constructivist approach models and actively participates in the education and training processes.

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Chapter 8

Überlegungen zur Effektivierung der DaF-Lehrerausbildung via emotionales Erleben

Gülcan ÇAKIR¹

Einleitende Gedanken

Wie bereits mehrmals in Medien und diversen Fachartikeln erwähnt, sind im heutigen Zeitalter digitale Plattformen und moderne Technologien nicht nur andauernde Teile des alltäglichen Lebens, sondern auch bestimmte Mittel, um zielgerichtet diverse Denkmuster und Wahrnehmungsmodelle der Wirklichkeit zu erfassen bzw. manipulativ erfassen zu lassen. Sie beeinflussen ebenso die Funktionsweisen des Gehirns, wie allgemein gedruckte und audiovisuelle Medien es schaffen Menschen im Leben positiv wie auch negativ, als auch informativ zu prägen. Der Hirnforschung zufolge werden äußere wie auch innere Wahrnehmungen durch Nervenzellen im Gehirn empfunden. Das bedeutet, dass die Wahrnehmung des Lebensumfeldes und der Blick der jeweiligen Person auf sich selbst ebenfalls durch Aktivitäten in den Hirnregionen bestimmt werden. Komplementär dazu wird ebenfalls deklariert, dass das Lernen als Gegenstand der Gehirnforschung² bezeichnet wird (Spitzer 2005: 1 zit. bei Rösler 2012:7).

Linde und Ewert (2019) sprechen in ähnlichem Sinne davon, dass man alles Erlebte auf neuronale Zustände im Gehirn zurückführen könne, wobei von einem permanent anwesenden Ich-Gefühl zu rechnen sei, welches die Steuerung von Handlungen übernehme. Doch ließe sich dieses Selbstgefühl wissenschaftlich noch nicht abschließend erklären, wobei die Wissenschaft auch nicht feststellen konnte, wo dieses „Ich“ im Gehirn verankert sei.



Abb. Steckt hier irgendwo das "Ich"?

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² In den 1990er Jahren wird in dem Sinne von der Gedächtnispsychologie gesprochen, wobei das Lernen als Ausbildung oder Korrektur von individuellem Gedächtnisbesitz⁴ verortet wurde (vgl. Bredenkamp, 1998, S.45).

Abgesehen von dem nichtgefundenen Ich im Gehirn, kann jedoch darauf hingewiesen werden, dass das Lebensumfeld, die Erlebnisse bzw. das ganze Erprobte, Wahrgenommene und Gemachte, sozusagen alles, was von der jeweiligen Person, also dem *Ich* erlebt, wahrgenommen und gedacht wurde und weiterhin im Gedächtnis andauert, ein Resultat der Aktivitäten des Gehirns sind. Es kann daher gefolgert werden, dass subjektive Erfahrungen des *Ichs*, die durch innere, wie auch äußere Geschehnisse bzw. Aktivitäten, die sich sowohl als wissensbezogene als auch emotionale Momente auszeichnen, nur der jeweiligen Person zuzurechnen sind.

Im weiteren Verständnis könnte dieses *Ich*, welches die Handlungen steuert, dafür genutzt werden auch für Lernprozesse effektiv zu funktionieren. Denn, wenn man auf einer weiteren Ebene die Funktionsweise des Gehirns hinterfragt, ist festzustellen, dass es aus zwei Hälften besteht, die die Verarbeitung von Informationen unabhängig voneinander durchführen können. Ihr Unterschied besteht u.a. im Aufbau und in der Konzentration der Botenstoffe, die von beiden Hälften gesteuert werden. Deshalb werden auch Reize auf unterschiedliche Art und Weise wahrgenommen, so dass die linke Gehirnhälfte vielmehr die Details die rechte hingegen großräumig die Zusammenhänge verarbeitet.

Die Vermutung, dass die rechte Hirnhälfte intuitiv und emotional arbeite und die linke dagegen analytisch und logisch vorgehe, wurde seit langem vertreten, jedoch erwies sich dies als falsch. Denn gerade, dass beide Hälften Informationen unterschiedlich wahrnehmen, kann als Grund dafür verstanden werden, dass ein Zusammenspiel beider Hälften eine ganzheitliche Leistung vollbringen kann. Die Verbindung zwischen beiden Hälften, also das Corpus Callosum funktioniere wie eine Brücke und wenn diese strukturell gestört, beschädigt oder sogar durchtrennt ist, entstehe eine Störung zwischen beiden Hälften, da sie nicht miteinander kommunizieren können (vgl. Linde & Ewert 2019). Doch um dies zu vermeiden, wird versucht so weit wie möglich beide Hälften anzusprechen und aktiv zu halten. Dies betrifft sowohl die Informationsentnahme als auch die dadurch entstandene Rückmeldung im alltäglichen wie auch im schulischen, bzw. institutionellen Bereich.

Das Gehirn führt durch seine Informationsverarbeitung in den erwähnten Bereichen dazu bestimmte Entscheidungen zu treffen, Handlungen durchzuführen, Zustände zu verstehen und kausale Beziehungen logisch herzustellen. Da die individuelle Lebenserfahrung genau dort gespeichert wird, wird das Verhalten mit Hilfe dieser geformt und gelenkt. In diesem Zusammenhang exemplifiziert von der Burchard (2019) eine negative Erfahrung mit einem Hund wie folgt: *Wer zum Beispiel mit Hunden immer nur gute*

Erfahrungen gemacht hat, wird ihnen vertrauensvoll begegnen. Wer dagegen schon einmal von einem Hund gebissen wurde, wird sie eher meiden.

Spitzer zufolge kann diese Erfahrung mit neuronalen Repräsentationen erklärt werden, wobei er im Allgemeinen eine Repräsentation als ein Neuron bezeichnet, das mit seinen ganz bestimmten Synapsenstärken der eingehenden Verbindungen dafür sorgt, dass das Neuron nur dann aktiv wird, wenn ein ganz bestimmtes Muster als Input vorliegt (vgl. Spitzer 2002:79). Es geht also um bestimmte Erfahrungen im Kopf, die aktiviert werden, wenn man eventuell mit ähnlichen Situationen konfrontiert wird. Demnach könnte auf fremdsprachendidaktischer Ebene, im Sinne des Deutschlernens davon ausgegangen werden, dass positive Erfahrungen mit Onlinespielen dazu führen können, dass man ebenso motiviert online durchgeführten Lernspielen oder Lernplattformen bzw. auch internetbasierten Materialien entgegenkommt. Denn die Erfahrung mit dem Internet zu hantieren, besteht schon im Kopf und kann sukzessive beim Lernen verschiedenartig Anwendung finden, sei es in Form von fremdsprachlich angelegten Sprachübungen zur Syntax, Wortbildung und Semantik, oder im Rahmen einer Suche nach bestimmten wissenswerten Quellen zum Vorbereiten einer schriftlichen Hausarbeit, eines mündlich gehaltenen Vortrags oder zur Bewältigung einer offenen Aufgabe in einer Fachprüfung bzw. im laufenden Kurs. Ebenso könnte eine positive Erfahrung mit einem Onlinespiel aus dem Internet dazu führen, dass man genauso motiviert online durchgeführten Lernspielen oder Lernplattformen bzw. auch internetbasierten Materialien entgegenkommt.

Denn die Erfahrung mit dem Internet zu hantieren, besteht schon im Kopf und kann sukzessive beim Lernen verschiedenartig Anwendung finden, sei es in Form von fremdsprachlich angelegten Sprachübungen zur Syntax, Wortbildung und Semantik, oder im Rahmen einer Suche nach bestimmten wissenswerten Quellen zum Vorbereiten einer schriftlichen Hausarbeit oder zur Bewältigung einer offenen Aufgabe in einer Fachprüfung.

Man müsste jedoch auch etwas skeptisch mit dem digitalen Angebot umgehen und beachten, dass das Internet zwar mit all seinen Facetten, zumeist positiv erscheint, indem das Recherchieren von Themen vereinfacht und die Findung von Alternativ-Antworten oder Lösungen auf bestimmte Fragen– mit Tools, wie Google Scholar, Google Akademik, insbesondere mit Chat GBT etc. begünstigt wird–. Im negativen Sinne könnte dieser Vorgang jedoch leicht zum Plagiierten verführen, denn das Gehirn wird unterdrückt und sucht nicht eigenständig nach Lösungen, sondern begnügt sich mit dem digital dargebotenen Inhalt. Daher sollten die verfügbaren Internetressourcen zunächst einmal überprüft, durchgelesen, gefiltert und erst dann mit Sorgfalt in Anspruch genommen

werden. Wenn man jedoch eher dazu geneigt ist, auf internetbezogene Spiele zu verzichten, dann stehen andere Arten von Spielen zur Verfügung, die im Unterricht genutzt werden können. Beispielsweise Gesellschaftsspiele, wie Spiel des Lebens, Monopoly, das Kartenspiel Uno, Mensch ärgere dich nicht, oder Memory. Ein alternatives Lernspiel, das wahrnehmen, überlegen, improvisieren, sprechen, vermuten und raten miteinbezieht, wäre das „Tabu“ Spiel als amüsantes Material, das in diversen Sprachen vorhanden ist und dessen Gebrauch unter den Studierenden meist in der Muttersprache zum gewohnten Alltag gehört, könnte unter Umständen der Lehrveranstaltung angepasst und erprobt werden, so dass Studierende sich auch im Lehr- und Lernraum, wie im gewöhnlichen Umfeld amüsierend verhalten und dabei mit ihrem eigenen Wortbestand in der Fremdsprache hantieren können.

Komplementär dazu wird angenommen, dass das Gehirn im Rahmen des Wahrnehmens und Weiterleitens von Informationen ähnlich wie ein Computer funktioniere, da es dazu fähig sei Informationen und Eindrücke, die man wahrnimmt in die verschiedenen Regionen des Körpers zu verleiten. So tue es auch ein Computer. Er bekommt Informationen, er verarbeitet sie und verteilt diese in verschiedene Bereiche. Diese können manchmal gegoogelte Themen oder eingegebene Wissensbestände sein. Analog dazu vermittelt das E-Mail schreiben auch Inhalte, die über die Tastatur eingetippt und durch das komplexe System des Computers an die nötige digitale Einheit adressiert werden. Nichtsdestotrotz wäre hier folgende Zwischenbemerkung angebracht und nicht wegzudenken: Obwohl grob gefasst das Gehirn, wie ein digitales Verarbeitungsgerät funktioniert, unterscheiden sich beide grundlegend: *das Gehirn kann weit mehr als eine Maschine: Mit dem Gehirn denkt und fühlt der Mensch, hier liegen die Wurzeln seiner Intelligenz* (GI 2021).

Demnach kommen im Gegensatz zum Computer Emotionen bzw. Empfindungen und Gefühle (vgl. Bermeitinger (2018) zum Vorschein, die all das Tun eines Menschen begleiten und ohne gefühlsmäßiges Bewerten dessen, was man tut, würde quasi das meiste schiefgehen. Die Erkenntnis, dass man sich im Leben nicht nur auf die eigene Rationalität verlassen sollte, da insbesondere das Sprachenlernen ohne den Compass der Gefühle nicht ganz funktionieren kann, wird bereits mit Butzkamm (2012: 5) bekräftigt, indem er im ähnlichen Kontext darauf aufmerksam macht, dass Verstand und Gefühl sich gegenseitig korrigieren und auf diese Art und Weise im Team arbeiten und einander aushelfen. D.h., dass das Lernen eine innere Bereitschaft erfordert, die in Kombination mit dem emotionalen Empfinden und dem rationalen Denken miteinander korreliert; folglich auf einen bedeutend interessanten Lehr- und Lernprozess mitwirkend fokussiert. Fremdsprachenlerner, wie auch angehende Deutschlehrer werden auf

ähnlicher Art und Weise durch ihre Gefühle begleitet, bei ihnen sind Empfindungen bzw. Emotionen dafür verantwortlich, dass z. B. die Bewältigung einer Aufgabe in positiver oder negativer Stimmung zu verschiedenen Ergebnissen führen kann. Ob man dabei zum gewinnbringenden Ziel kommt oder an dem verbitterten Scheitern leidet, ist eine andere Frage, die in diesem Zusammenhang nicht weiter hinterfragt, sondern nur angedeutet wird.

Studierende, des Deutschen als Fremdsprache mit Bezug zum Lehramt nehmen normalerweise vor Studienbeginn an einer Sprachprüfung teil, durch deren Ergebnis entschieden wird, ob ein in der Regel einjähriger Vorbereitungskurs in Anspruch genommen werden müsste oder ob die bereits vorhandenen Fremdsprachenkenntnisse ausreichen, direkt mit dem Studium zu beginnen. Dass auch Jugendliche mit Migrationshintergrund aus einem deutschsprachigen Land sich für ein solches Studium entscheiden, festigt die Tatsache, dass erhebliche Unterschiede beim deutschen Sprachgebrauch unter den Studierenden des Fachs zu verzeichnen sind. Daher entstehen nicht zu unterschätzende Ungleichheiten im jeweiligen Sprachniveau untereinander, da auch der Besuch des einjährigen Vorbereitungskurses nicht unbedingt zu einem muttersprachennahen Sprachgebrauch in der Fremdsprache führen kann³. In diesem Zusammenhang brauchen die Studierenden, die mit dem Fachstudium beginnen bestimmte Strategien und Verfahrensweisen, die dabei helfen, die ungewöhnliche, jedoch notwendige Umsetzung und Vorgehensweise im Rahmen des Übergangs in ein fachsprachliches Umfeld sowohl fachlich als auch fremdsprachlich meistern zu können. Das Lernen wird unter diesem Aspekt anstrengender, denn sowohl das Fachliche auf Deutsch muss verstanden und in der Fremdsprache auch aktiv gebraucht werden, wobei ‚neuen Lernstoff behalten‘ und ‚effektiv nutzen‘ in der Tagesordnung stehen. Ein schwieriges Unterfangen für die angehenden Deutschlehrer, dessen Bewältigung ohne Motivation und Lernbereitschaft schwer zu leisten ist. Da der Übergang in eine weitere fortgeschrittene, wie auch verschiedene Dimension in den Köpfen der Studierenden mit Unklarheiten und Fragezeichen belegt sind – so die Studierenden – bestehe die Notwendigkeit auf Seiten der Lehrkraft mit Geduld und Wohlwollen zu intervenieren, um die Studierenden aufzuklären und zu ermutigen, statt ihre Hemmungen zu begünstigen. Impulse für mehr Freude im

³ bei den meisten Studierenden mit Migrationshintergrund kann ein muttersprachenähnlicher Gebrauch beim Deutschen im freien Sprechen beobachtet werden. Es handelt sich z.B. dabei um das umgangssprachliche mündliche Verhalten, nichtsdestotrotz kommen jedoch orthografische Fehler bei schriftlichen Formulierungen vor, die während des Studiums gemindert bzw. behoben werden müssten um angemessene Schreibfertigkeiten sowohl für sich selbst als auch später für die eigene Zielgruppe effektiv einsetzen und exemplifizieren zu können.

Uni-Alltag, wie auch am Fachunterricht würde theoretisch gesehen Studierende motivieren,

Christine Reitzer (2014: 123) betont diesbezüglich, dass es für die eigene Motivation besonders sinnvoll sei, dass Lernende gefühlsmäßig davon überzeugt sind, selbst für das effektive Lernen beisteuern zu können. Ein Lerner müsste demnach an seine eigenen Fähigkeiten glauben und in Aktion treten, um sie zu fördern und Effektives zu erreichen. Hier spielt das Motiv bzw. die Motivation eine nicht zu unterschätzende Rolle. Denn das Lernen von Fachinhalten in und mit der Fremdsprache stellt die Studierenden dermaßen unter Druck, dass sie leicht in Panik geraten und daher zusätzlich die Hilfe der Lehrkraft beanspruchen.

Im engeren Sinne wird hier davon ausgegangen, dass Lehrende als Person einer sehr wichtigen Mittlerrolle verpflichtet sind, da sie im Stande sind bei den Studierenden Motivation zu fördern oder zu hemmen, was im weiteren Verständnis die Effektivität des Lernprozesses mitbestimmen wird. Menschen werden auch im normalen Alltag durch einen Anreiz motiviert, bei dem es sich um einen Auslöser handeln kann, der entweder eine Erwartung oder eine Vorstellung hervorruft (Lefrançois 2006 zit. bei Reitzer 2014:122). Exemplifiziert kann dies mit der Freude einen Ausweg zu finden, wenn man z. B. unterwegs mit dem Auto ist und den Weg zum Ziel nicht findet, in dem Fall reicht meist ein Schild mit dem Hinweis „Ausfahrt“ dafür aus, um wieder motiviert auf der Suche nach dem beabsichtigten Weg zu bleiben. Denn das Schild ist hier der Anreiz dafür, dass es noch andere begehbbare/befahrbbare Wege gibt, die zum Ziel führen. So kann diese Erfahrung auch beim Sprachenlernen funktionieren. Wenn man sich beim Lernen den Nutzen des Gelernten vor Augen hält und nicht nur den einen Weg als einzige Lösung für sich betrachtet, eröffnen sich diverse Möglichkeiten zum Ziel zu gelangen, so wie auch Verknüpfungen im Hirn verschiedene Wege gehen, wenn es aufgrund von Nekrosen oder Verstopfungen offenbar nicht möglich ist, auf dem eingeschlagenen Weg zu bleiben. Ganz plausibel versucht das Gehirn das Hindernis zu umgehen, um den Weg zur nächsten Synapse zu erreichen. Im ähnlichen Fall sollte im Lernprozess eventuell darauf verzichtet werden auf dem langweiligen und an sich komplizierten Lernstoff zu verharren. Es wäre in dem Fall plausibel und lerngünstiger den nächsten Schritt zu gehen, der einen anderen Aspekt des Lernstoffes in Anspruch nimmt und der scheinbar nicht so mühsam und schwer zu durchschauen ist. Für den Lernenden wäre der Übergang zum unproblematischen Lernstoff der Anreiz, durch den die Motivation und Freude am Lernen aufrechterhalten werden kann, indem die Blockaden im Lernprozess aufgehoben werden können, ähnlich wie es im Gehirn stattfindet.

Auf einer weiteren Ebene könnte ein angehender DaF-Lehrer beispielsweise bildhaft an seine Erfahrungen mit Lehrern aus seiner eigenen Schulzeit denken und sich anders verhalten wollen, eventuell besser Deutsch sprechen, den Unterricht kreativer gestalten, Lust und Laune fördern, damit keine Langeweile im Klassenraum dominiert. So wäre er von sich aus selbst (intrinsisch⁴) motiviert, sich Wissenswertes besser anzueignen, um nicht so zu sein, wie die Lehrenden von damals.

Darüber hinaus stellt Reitzer (2014:109) in ihrer breitangelegten empirischen Studie ‚zur Frage der Ermutigung von Lehrenden und Lernenden‘ fest, dass nicht unbedingt die fachliche Kompetenz von Lehrenden, sondern vielmehr ihre Begeisterungsfähigkeit hochgeschätzt wurde. Wenn diese Fähigkeit zu begeistern vorhanden wäre, würde diese die Studierenden ermutigen und ansteckend auf sie einwirken, wobei im Gegenteil fehlende Freude am Fach bei den Lehrenden/ sich auf die Lernenden demotivierend auswirken kann und sie dadurch in einen „Stand-by-Modus“ schalten. Daher wird von Reitzer besonders gefordert, dass Lehrende so weit wie möglich begeisternd sein sollten und ihre Freude am Fach sichtbar machen. Denn die emotionale Wärme und emphatisches Verhalten vonseiten der Lehrenden ist der größte Wunsch von den meisten Lernenden, um mit dem Fach auch motiviert weiterzumachen und nicht aufhören zu studieren (ebd.). Es kann hier von ganzheitlicher Bildung und gehirngerechtem Lernen gesprochen werden, da in diesen Konzepten die Lernenden und ihre emotionale Seite im Vordergrund stehen.

Ganzheitliches Lernen meint in traditioneller Bedeutung das konkrete Erleben mit allen Sinnen, welches alle Facetten des menschlichen Daseins ansprechen soll. Johann Heinrich Pestalozzi versteht darunter das Lernen mit „Kopf, Herz und Hand“ (Surkamp 2017: 99).

Kurse mit Autonomie und Kreativitätsanspruch

Es gibt an der Universität Kurse⁵ bei denen Onlinematerial einerseits direkt den Inhalt und die Struktur des Kurses ausmacht, andererseits auch solche, bei denen Studierende Themen und Inhalte aus dem Internet erforschen und diese anwenden, um ein Referat zu halten oder eine Präsentation (PowerPoint, Prezi etc.) vorzubereiten, die das Behalten des im Unterricht Gelernten, quasi den Lernstoff festigen sollen. In den Lehrplänen zur Fremdsprachenlehrerausbildung werden somit bestimmte Lehrveranstaltungen bzw. Kurse angeboten, bei denen

⁴ intrinsische Motivation kann allein durch die Beschäftigung mit einer Sache als solche Faszination auslösen, da sie aufgrund von Interesse gesteigerte Aufmerksamkeit bewirkt. (Reitzer 2014: 62)

⁵ Ein ausführliches Vorlesungsverzeichnis befindet sich Online unter: <https://cdn.anadolu.edu.tr/files/anadolu-cms/7gldkYw1/file/egitim-bba20326078848eb.pdf> (24-28). Zugriff am 10.10.2025.

es der Lehrkraft überlassen bleibt, ob und inwieweit Onlineangebote oder Materialien in Form von Blended Learning genutzt und erprobt werden oder auch nicht. Andererseits gibt es auch Kurse, die unmittelbar mit digitalen Medien und Technologien im Fremdsprachenunterricht zu tun haben.

In dieser Studie geht es um zwei Kurse, die an der pädagogischen Fakultät als Wahlpflichtfach mit 2 Wochenstunden im Wintersemester angeboten werden: Zum ersten geht es um folgende Kurse, die jeweils als Kurse gelten, die Autonomie fördern – da die Studenten dazu befähigt werden sollen selbstbestimmt zu handeln– wie auch Kreativität und Motivation der Studierenden besonders in Anspruch nehmen:

- (ALÖ 253) Almanca Öğretiminde Drama /Drama im DaF-Unterricht
- (ALÖ 439) Almanca Öğretiminde Materyal Tasarımı/Materialdesign im DaF-Unterricht

Allein die Namen lassen vermuten, dass es in beiden Kursen nicht nur um trockene Fakten geht, die in Form einer bloßen Frontalvermittlung stattfinden, in denen die Teilnehmer als passive Einstopfkästen in Frage kommen, sondern mit ihren individuellen Fähigkeiten und aktiven, wie auch kreativen Möglichkeiten beansprucht werden.

Drama im DaF-Unterricht

Dieser Kurs wird im dritten Semester, also im zweiten Studienjahr als Wahlpflichtfach des Wintersemesters angeboten und beinhaltet nach dem Online - Vorlesungsverzeichnis (A.Ü., 2025, S.36) folgendes:

Definition und Bedeutung des Begriffs „Drama“; Konzepte wie Psychodrama, kreatives Drama, pädagogisches Drama, Soziodrama usw.; Beziehung zwischen Drama und Spiel; Geschichte der Anwendung von Drama in der Bildung; Beziehung zwischen Drama und Theater, Struktur und Anwendungsphasen von Drama in der Bildung; Dramaumgebung und Lehrerqualifikationen; Komponenten und Bewertung von Drama; Beispiele für Drama, die den Bildungszielen des Fachbereichs entsprechen, Entwicklung und Anwendung von Beispielen, De Bono Sechs-Hüte-Technik, Pantomime, Rollenspiele, Sketche und Stummfilme (AÜ Katalog 2025, S. 36) .

Dieser Kurs gilt als einer der Kurse, der von den Studierenden sehr beliebt und gewählt wird, und von daher mit einer großen Anzahl von Teilnehmern stattfindet. Es erfreut ebenfalls die Lehrkräfte, die den Kurs leiten, dass großes Interesse besteht, wobei dieses korrelierende Glücksgefühl schon im Vornhinein zum Begeistern und begeistert sein hinleitet. Inhaltlich geht es zunächst darum den Unterschied zwischen

Theater und Drama hervorzuheben und diese in Redensarten zu exemplifizieren. Szenisches Darstellen, wie auch Rollenspiele werden besprochen und mit YouTube-Videos zur Schau gestellt. Begriffe wie Stegreif (Improvisation) und kreatives Handeln werden durch Mindmaps und Assoziation-Tabellen in Form von Präsentationen aufgezeigt. Im Nachhinein geht es um 25 bekannte kreative Dramatechniken, die zunächst gelesen, verstanden und selbst im Kurs erprobt und eingeübt werden. Die Sechs-Hüte-Technik von Edward de Bono wirkt auf die Studierende meist bekannt und lustig. So werden sie aufgefordert für die anstehende Woche diese zu erforschen und jeweils ihre eigenen Fragestellungen mitzubringen, die dann im Kurs mit farbigen Einstellungen durchgegangen und zum Schluss geführt werden. Hier wird die Tatsache deutlich, dass Emotionen das ganzheitliche Lernen fördern und eine handlungsmotivierende Funktion ausüben, wobei auch bestimmte Lernstrategien bemerkbar erscheinen, die bei der Formulierung in deutscher Sprache zum Einsatz kommen und dem erfolgreichen Lernen beitragen (vgl. Küpper-Tetzel (2015)).

Materialdesign im DaF-Unterricht

Der im siebten Semester angebotene Kurs beinhaltet die Bewertung von Lehrbüchern und Erstellung von Zusatzmaterialien für die im Deutschunterricht verwendeten Lehrbücher, wobei zunächst die Grundsätze und die Kriterien für die Bewertung und Analyse der Lehrbücher vermittelt und besprochen werden. Die Lehr- und Lernziele, wie auch die Teil-Themen der Module werden unter die Lupe genommen und darüber nachgedacht, welche Bilder, Texte, Übungen und Aufgaben zur Erweiterung bzw. Bereicherung der Deutschkenntnisse im Lehrbuch vorhanden sind und inwieweit sie die Motivation der Schüler der gymnasialen Oberstufe fördern und das Interesse wecken oder das Gegenteil bewirken könnten; nach dem Durchstöbern in den Lehrbuchseiten, werden zum Zwecke der Anpassung an das jeweilige Zeitalter innovative, wie auch kreative Materialien von den Studierenden erwartet, die der jeweiligen Zielgruppe entsprechend, sowohl ihr Sprachniveau als auch ihre Erfahrungen und Interessen berücksichtigen, wie auch das Behalten im Kopf begünstigen sollten, wobei zumeist virtuelle Spiele, online -Videos oder digitale Übungen in Betracht gezogen werden. Ob die Studierenden des siebten Semesters sich zusätzlich auch für dreidimensionales Bastelmaterial entscheiden würden, bleibt normalerweise ihnen überlassen, wird aber als solche von der Lehrkraft nicht unbedingt gefordert und erwartet. Die Durchsicht und analytische Betrachtung der Module bzw. Lektionen mit ihren Teilthemen erfolgen dann auf dem Hintergrund des zu Beginn der Lehrveranstaltung von der Lehrkraft als theoretische Grundlagen des effektiven Lernens, Behaltens und Vermittelns im DaF-Unterricht eingeführten Grundwissens, wobei Aspekte, wie Lernziele der jeweiligen Lektion,

Lerninhalte, wie auch der Bezug zum Lerner, die Aktualität und Authentizität der Sprache und der Situationen im Blickpunkt stehen. Die Studierenden des Faches sollten sich informieren, überlegen und anschließend darauf einigen, wie sie selbst im Unterricht mit einem bestimmten Lehrwerk in der Regel umgehen würden; welches Zusatzmaterial sie, in welcher Form und wofür heranziehen würden etc. Durch gemeinsames Handeln der Studierenden in Arbeitsformen wie Partner- oder Gruppenarbeit sollte zunächst der Normalfall der DaF-Lehrer simuliert und erprobt werden. Im zweiten Schritt geht es dann darum, einen imaginären Lehr- und Lernprozess zu inszenieren, in dessen Handlungszusammenhang sich die gesamte Gruppe einbringen soll. Aber als Vorbereitungsstufe sollten sich die Studierenden zu abgemachter Zeit gemeinsam in Seminarräumen der Fakultät oder eventuell auch in den Räumlichkeiten der Universitätsbibliothek treffen, wobei beim Treffpunkt die Frage nach kreativen Ideen ausschlaggebend sein sollte, denn durch Intervention und Improvisation sollen Möglichkeiten zur Steigerung und Aufrechterhaltung der Lust und Motivation, wie auch die Erhöhung der Behaltensleistung im Gehirn für das Weiterlernen der angehenden DaF-Lehrer einerseits und das Bereichern der eigenen Erfahrungen bzw. Kenntnisse für die zukünftige DaF-Lehrtätigkeit andererseits geschaffen werden. Auf dem Wege einer im Studium erworbenen Handlungskompetenz sollte es ebenso auch gehören, dass das, was erlernt wird, auch später im unterrichtlichen Prozess Anwendung findet, so dass man dabei die Freude und die Lust zum Lehren, wie auch Lernen weitergeben kann und Lernende davon überzeugt, selbstwirksam zu sein und fest an sich selbst zu glauben, motiviert etwas zu vollbringen, wie auch die zu lernende Fremdsprache so freudig und motiviert zu lernen, wie es dem schon erwähnten gehirngerechten Lernen und im Kopf behalten am ehesten entsprechen würde.

In diesem Kurs geht es zunächst um eine Begriffsbestimmung. Drama vs. Theater, wie auch um Arten und Formen des Dramas:

„Definition und Bedeutung des Begriffs Drama; Konzepte wie Psychodrama, kreatives Drama, pädagogisches Drama, Soziodrama usw.; Beziehung zwischen Drama und Spiel, Geschichte der Anwendung von Drama in der Bildung; Beziehung zwischen Drama und Theater, Struktur und Anwendungsphasen von Drama in der Bildung; Dramaumgebung und Lehrerqualifikationen; Komponenten und Bewertung von Drama, Beispiele für Drama, die den Bildungszielen des Fachbereichs entsprechen, Entwicklung und Anwendung von Beispielen, De Bono Sechs-Hüte-Technik, Pantomime, Rollenspiele, Sketche und Stummfilme“.⁶

⁶ Eigene Übersetzung des Verfassers. (aus AÜ-Katalog 2025, S:36)

Materialdesign im DaF-Unterricht

„Bewertung der im Deutschunterricht verwendeten Lehrbücher; Vermittlung der Grundsätze für die Materialauswahl, Untersuchung und Bewertung von Lehrbüchern; Untersuchungen in Lehrbüchern: Lösung und Bewertung von Übungen, Überarbeitung ungeeigneter Übungen und Anpassung an den Unterrichtskontext; Zu beachtende Punkte bei der Auswahl von Videos und anderen visuellen Materialien, die im Unterricht verwendet werden können, und deren optimale Nutzung im effektiven Deutschunterricht“⁷.

Im Rahmen dieses Beitrags, z.B. der Kurs „Materialdesign im DaF-Unterricht“, in der bisher dreidimensionale handfeste Bastelgutsachen als Zusatzmaterialien von den Studierenden auf der Grundlage von untersuchten Lehrwerken für die gymnasiale Oberstufe im nationalen Anwendungsbereich als Zusatzmaterial angefertigt wurden, wobei Tusche, Filzstifte, Pappe, Schnüre und Bänder, Kartons, Filz und sonstige Bastelutensilien gebraucht wurden. Im Wintersemester 2023-2024 wurde gemeinsam mit den Studierenden besprochen, wie die Lehrveranstaltung im derzeitigen Studienjahr interaktiv und effektiv gemeinsam gestaltet werden könnte, sodass sowohl der Realitätsbezug zu den Lernern an Oberschulen erhalten bleibt als auch die Autonomie und Motivation der Studierenden weiterhin gefördert werden können. In diesem Sinne herrschte gegenseitiger Konsens darüber, dass die Studierenden die Lehrwerke in Partner- oder Gruppenarbeit außerhalb der Lehrveranstaltung überprüfen, besprechen, anschließend gemeinsam bearbeiten und mit geeigneten online-verfügbaren, wie auch durch Internetrecherchen vorbereitete Materialien, wie Arbeitsblätter oder Lernspiele Kohout etc. bereichern, neue Lernmöglichkeiten ausschöpfen und intervenieren. Ob die Studierenden des 7. Semesters sich zusätzlich auch für dreidimensionales Bastelmaterial entscheiden würden, blieb ihnen überlassen, wurde aber als solche von der Lehrkraft nicht gefordert und erwartet. Die Durchsicht und analytische Betrachtung der Module bzw. Lektionen mit ihren Teilthemen konnten auf dem Hintergrund des zu Beginn der Lehrveranstaltung von der Lehrkraft als theoretische Grundlagen des effektiven Lernens, Behaltens und Vermittelns im DaF-Unterricht eingeführten Grundwissens erfolgen, wobei Aspekte, wie Lernziele der jeweiligen Lektion, Lerninhalte, wie auch der Bezug zum Lerner, die Aktualität und Authentizität der Sprache und der Situationen im Blickpunkt waren. Die Studierenden des Faches sollten sich informieren, überlegen und anschließend darauf einigen, wie sie selbst im Unterricht mit einem bestimmten Lehrwerk in der Regel umgehen würden; welches Zusatzmaterial sie, in welcher Form und wofür heranziehen würden etc. Durch gemeinsames Handeln der Studierenden in Arbeitsformen wie Partner- oder

⁷ Eigene Übersetzung des Verfassers. AÜ-Katalog 2025, S:39).

Gruppenarbeit sollte zunächst der Normalfall der DaF-Lehrer in sogenannten Zümre-Versammlungen simuliert und erprobt werden. Im zweiten Schritt ging es sodann darum, einen imaginären Lehr- und Lernprozess zu inszenieren, in dessen Handlungszusammenhang sich die gesamte Gruppe einbringen sollte. Aber als Vorbereitungsstufe sollten sich die Studierenden gemeinsam im Raum zu abgemachter Zeit, oder eventuell auch in den Räumlichkeiten der Universitätsbibliothek treffen, wobei beim Treffpunkt die Frage nach kreativen Ideen ausschlaggebend war, denn durch Intervention und Improvisation sollten Möglichkeiten zur Steigerung und Aufrechterhaltung der Lust und Motivation, wie auch die Erhöhung der Behaltensleistung im Gehirn für das Weiterlernen der angehenden DaF-Lehrer einerseits und das Bereichern der eigenen Erfahrungen bzw. Kenntnisse für die zukünftige DaF-Lehrtätigkeit andererseits geschaffen werden. Auf dem Wege einer im Studium erworbenen Handlungskompetenz sollte es ebenso auch gehören, dass das, was erlernt wird, auch später im unterrichtlichen Prozess Anwendung findet, so dass man dabei die Freude und die Lust zum Lehren, wie auch Lernen weitergeben kann und Lernende davon überzeugt, selbstwirksam zu sein und fest an sich selbst zu glauben, motiviert etwas zu vollbringen, wie auch die zu lernende Fremdsprache so freudig und motiviert zu lernen, wie es dem schon erwähnten gehirngerechten Lernen und im Kopf behalten am ehesten entsprechen würde. Zunächst ist dafür Motivation erforderlich, und wenn es um die eigene Motivation geht, ist es notwendig, dass das Gefühl dominiert, selbst etwas Effektives gemacht zu haben, was zur eigenen Entwicklung beiträgt und die eigene Aktion dafür verantwortlich ist, dem Lernen positiv beizusteuern.

Auf dem Wege einer im Studium erworbenen Handlungskompetenz sollte es ebenso auch gehören, dass das, was erlernt wird, auch später im unterrichtlichen Prozess Anwendung findet, so dass man dabei die Freude und die Lust zum Lehren, wie auch Lernen weitergeben kann und Lernende davon überzeugt, selbstwirksam zu sein und fest an sich selbst zu glauben, motiviert etwas zu vollbringen, wie auch die zu lernende Fremdsprache so freudig und motiviert zu lernen, wie es dem schon erwähnten gehirngerechten Lernen und im Kopf behalten am ehesten entsprechen würde. Zunächst ist dafür Motivation erforderlich, und wenn es um die eigene Motivation geht, ist es notwendig, dass das Gefühl dominiert, selbst etwas Effektives gemacht zu haben, was zur eigenen Entwicklung beiträgt und die eigene Aktion dafür verantwortlich ist, dem Lernen positiv beizusteuern. Christine Reitzer (2014:123) spricht in diesem Zusammenhang von positiven Veränderungen, die man auf das eigene Tun zurückführen kann und betrachtet die Selbstwirksamkeit, die dabei entsteht als äußerst bedeutend für den Lernprozess. Außerdem ist das Gehirn evolutionsbiologisch darauf ausgerichtet, möglichst energiesparend mit eigenen Ressourcen umzugehen und wenn etwas nicht als bedeutend und relevant erscheint,

wird es auch nicht gemerkt und fließt – wie es sprichwörtlich heißt– „bei einem Ohr rein, beim anderen wieder hinaus“ –erst unter starker emotionaler Aktivierung werden Erlebnisse ins Hirn eingebrannt heißt es bei Hüther (2002: 449), wobei er sich darauf bezieht, dass nur dann ein Punkt im Hirn leuchtet, wenn es als wichtig erscheint, oder Neugierde weckt, in solchen Fällen werden die emotionalen Zentren stark aktiviert und es ist insofern möglich etwas Hinzuzulernen und im Hirn zu verankern. Meyer zufolge ist das Gehirn kein Muskel, dass trainiert werden kann, um effektiv funktionieren und behalten zu können. Er geht vielmehr davon aus, dass das Gehirn für die Behaltensleistung Abwechslung braucht und körperliche Bewegungen, wie auch soziale Aktivitäten in Anspruch genommen werden sollten (vgl. 2014, S.15). Insofern ist es für das gehirngerechte Lernen notwendig und bedeutend, dass verschiedene Lernaktivitäten berücksichtigt werden und das Lernen in Kursen, wie auch an Oberschulklassen verschiedenartig abläuft. Beispielsweise erweist sich der Einsatz von bestimmten Mnemotechniken und Eselsbrücken für das Gedächtnis als gültig und brauchbar, aber schließt das Repetieren nicht aus, es sei denn, die Ereignisse sind stark emotional beladen und im Gedächtnis eingebrannt (vgl. Gasser 2010, S. 30).

Schlussfolgerung und Empfehlungen

Ausgehend von der Lern- und Hirnforschung, wie auch aus fremdsprachendidaktischer Perspektive ist zu erschließen, dass Lernen und Behalten im Gehirn ablaufen und zum erfolgreichen Lernen erst dann den Weg eröffnen, wenn Aspekte berücksichtigt werden, die zum Interessengebiet des eigenen Ichs passen und mit der Selbsterkenntnis im Einklang stehen, insofern ist ebenfalls der Wille entscheidend, für sich selbst aktiv zu werden, sozusagen aus einem inneren Drang zu lernen. Mit anderen Worten, wenn es unter die Haut geht und Gefühle dabei sind (B. Anstelle des nur Einpaukens von Fakten, bleiben aktive Erfahrungen und Tätigkeiten im Gehirn verankert, die Lust und Laune fördern, wie auch schon einigermaßen Bekanntes beanspruchen und Neugier wecken. Es besteht kein Zweifel daran, dass Interesse etwas selbst erkunden zu wollen, bzw. von Erfahrungen ausgehend, dem eigenen Ich folgend das Experimentieren und Tun im selbstverantwortlichen Sinn – kombiniert mit der Begeisterungsfähigkeit der Lehrkraft– im Normalfall auf Lernende positiv wirkt und die Behaltensleistung, wie auch die Freude am eigenen Lernerfolg erhöht. Demzufolge sollten bestimmte Aspekte im Lernprozess berücksichtigt werden, die laut Birkenbihl vom einfachen Gehirnbesitzer zum vielfachen Gehirnbenutzer verleiten (vgl. Birkenbihl 2024:121ff). Das Nutzen des Gehirns ist besonders im Rahmen des DaF-Unterrichts als Vorteil zu berücksichtigen, da im Türkei bezogenen Sinn Deutsch zumeist als zweite Fremdsprache gelehrt und/ oder gelernt wird. Die erstgelernte Fremdsprache dient in

dem Falle mit der sogenannten Muttersprache korrelierend als Vorlage zum Lernen weiterer Sprachen und kann so aufbauend auf das schon bestehende bzw. erworbene Repertoire zugreifen, das bereits aus bestimmten Sprachlernstrategien und -erfahrungen bereichert fungiert. Kurse, wie Materialdesign und Drama im DaF-Unterricht sind nur einige von vielen Kursen, in denen das Gehirn mit seinen aktiven Funktionen zum Vorschein kommen. Es sind Kurse in denen angehende Lehrer ihr handelndes Lernen selbstbestimmend in die Hand nehmen und mit eigenem Begeisterungsvermögen, wie auch ihrer eigenen Lernbereitschaft und Motivation ein Teil des Kurses werden. Im Endeffekt strahlen die Teilnehmenden am Kurs. Sie sind glücklich und erfreut, wenn die Lehrkraft des Kurses mit nickendem Kopf lächelnd einen Blick auf sie wirft. Denn sie wissen, dass das unter normalen Bedingungen als Beweis dafür gilt, dass alles gut gelaufen ist. Die spürbare Zufriedenheit und emotionale Wärme im Raum breiten sich, in dem im Endeffekt eine Besprechung über die erbrachten Leistungen mit Tee und selbstgemachtem Gebäck bzw. Keksen aus der Kantine die Krönung bilden. Beim Studium mit Bezug zum Lehramt ist zu empfehlen innovative Verfahren im Lichte des ganzheitlichen und vertrauten Lernens gehirngerecht mit Lust und Laune in Betracht zu ziehen. Außerdem ist es aber wichtig, dass man die Mechanismen des eigenen Denkorgans nicht nur kennt, sondern auch damit umzugehen weiß. Ein möglicher Zugang ist es daher, Inhalte emotional aufzuladen, mit Vorwissen zu verknüpfen. Dies kann in der Mnemotechnik beispielsweise eine Liste von Gegenständen oder Körperteilen, bei der man an jedem Punkt ein zu merkendes „Item“ ablege und eine kleine emotionale Geschichte dazu erfinde (vgl. Birkenbihl 2024, S. 28).

Im Grunde genommen müssten sich die Dozenten bemühen auf dem letzten Stand der Forschung zu sein, zumindest, was die eigenen Kurse anbelangt, denn durch zeitgemäße bzw. aktuelle Erkenntnisse in der Fremdsprachenlehrforschung, wie auch in der Didaktik und Methodik des effektiven Lehrens und Lernens mit Emotionen und der korrelierenden Wirkung bzw. des Zusammenspiels der praktizierten Erfahrungen von Lehrkräften bzw. Dozenten oder Professoren würde nichts im Wege stehen, engagierte Studierende oder besser gesagt angehende Deutschlehrer effektiv und nachhaltig zu fördern und auszubilden.

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