ARTIFICIAL INTELLIGENCE AND HAPPINESS

HOW AI CAN POSITIVELY IMPACT CITY LIFE

Happy City
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ARTIFICIAL INTELLIGENCE AND HAPPINESS: WAYS TO POSITIVELY IMPACT CITY LIFE

Target Audience

- Educators, healthcare workers, security personnel, religious officials, university students, and city residents.

Duration

1 Session (Total 90 minutes)

Objectives

1. To ensure participants gain knowledge about the impact of artificial intelligence on happiness and urban life.
2. To offer creative and applicable solutions on how artificial intelligence can be utilized in professional fields.
3. To discuss the positive effects of artificial intelligence on happiness, productivity, and social benefit.
4. To encourage participants to use artificial intelligence in their professions and community projects.

Seminar Program

1. Opening and Introduction (10 Minutes)

Greeting and Introduction:

- The seminar is briefly introduced by the moderator.
- A general definition of artificial intelligence is provided and its connection to happiness is highlighted.

An Engaging Start:

- The question "What can artificial intelligence provide you for a happy life in the city?" is directed to participants regarding urban happiness.
- Participants' attention is captured with a short video and visual.

2. Main Section: Artificial Intelligence and Happiness (60 Minutes)

a) Artificial Intelligence and Urban Happiness: General Framework (15 Minutes)

Effects of artificial intelligence on individual and societal happiness:

- Education: Increasing student achievement, personalized learning plans
- Health: Mental health applications, stress management
- Security: Data-driven security measures for more peaceful living spaces
- Religion: Emotional support and ethical guidance

b) Contributions to Professional Fields (20 Minutes)

For Educators: AI-supported learning platforms that enhance students' achievement and happiness levels are discussed.

For Healthcare Workers: Attention is drawn to mobile applications that support mental health and provide stress management through AI.

For Security Personnel: Discussion on how AI can predict risks, optimize security, and enable safer city planning.

For Religious Officials: The impact of AI on spiritual guidance and social support is examined.

c) Practical Examples and Success Stories (15 Minutes)

Prominent AI projects from the world and Turkey:

- Happiness-enhancing city applications (e.g., smart parks, health screening systems, etc.)
- The ethical dimension of artificial intelligence
- Sustainable use of artificial intelligence

3. Interactive Q&A and Discussion (15 Minutes)

An exchange of ideas takes place on how participants can use AI in their own fields. The following questions can lay the groundwork for a productive discussion:

- How would you use artificial intelligence to be happier in your profession?

- If you were to design an AI project that increases happiness in your city, what would it be?

4. Closing (5 Minutes)

- The seminar is summarized and a thank-you speech is delivered.
- AI resources and application recommendations that support happiness are presented.
- Participants' opinions are gathered through an evaluation and feedback form.

Technical Requirements

Venue: Conference Hall

Equipment: Projector, microphone, laptop, and internet connection

Materials: Handout brochures for participants and resources accessible via QR code

Assessment

Interactive Assessment:

- How did participants recognize AI's contribution to happiness in their own fields?
- What are participants' tendencies and intentions to apply the knowledge and skills acquired during the seminar in their professional practices?

ARTIFICIAL INTELLIGENCE AND HAPPINESS

Definition and Importance of Artificial Intelligence

Today, artificial intelligence (AI) is a pioneering technology with application areas across a wide range of sectors and the potential to transform social structures. John McCarthy defined AI as "the science and engineering of making intelligent machines, especially intelligent computer programs" (McCarthy, 2007, p. 2). Furthermore, Sheikh et al. (2023) stated that there is no complete consensus on the definition of AI. They explained this situation by noting that AI is "an imitation or simulation of something we do not yet fully understand ourselves: human intelligence" (p. 16).

The fundamental purpose of AI is to develop systems capable of exhibiting abilities inherent to human behavior—such as perception, logical reasoning, learning, planning, and prediction—and that can think like humans (Xu et al., 2021). Additionally, AI has begun to be frequently used in many different fields today, including education, health, engineering, and music (Moore & Sharma, 2021; Lis-Gutiérrez & Pulido-Flórez, 2024; Shalini & Kumar, 2025; Xu & Baghaei, 2025; Vera, 2024; Zhu et al., 2025). Therefore, it can be stated that AI has begun to take its place in virtually every area of human life in today's world.

For this reason, it can be argued that AI has become a transformative force in the age of technology. In education, it can increase equality of opportunity by offering personalized learning experiences; in healthcare, it can accelerate early diagnosis and treatment processes; in engineering, it can raise efficiency and enable more conscious use of resources. Moreover, in fields requiring greater creativity skills—such as art, music, and design—it can open new horizons and support human productivity. In short, AI can be described not merely as a technological development but as a strategic transformation tool that enhances quality of life and accelerates societal progress.

Fundamental Concepts of Artificial Intelligence

1. Types of Artificial Intelligence

Artificial intelligence is generally divided into three categories (Russell & Norvig, 2020):

1. **Narrow AI (ANI):** Systems specialized in a specific task. (For example, virtual assistants, recommendation algorithms, etc.)
2. **General AI (AGI):** Systems with human-level thinking and problem-solving abilities. (AGI is still in the development stage.)
3. **Super AI (ASI):** Systems that surpass human intelligence. (A theoretical concept that has not yet been realized.)

2. Components of AI (Goodfellow et al., 2016)

- **Machine Learning:** Modern applications of AI are largely based on machine learning. Machine learning is a sub-branch of AI that enables computers to learn from data and make decisions based on what they have learned, without being explicitly programmed.

- **Deep Learning:** Using multi-layered artificial neural networks, it processes data hierarchically and learns all information by itself, from low-level features to complex concepts.
- **Natural Language Processing (NLP):** It is described as a set of groundbreaking technologies for tasks such as understanding human language, translation, and text generation.

3. Ethics and Security

The ethical use and security of AI have come to the forefront in recent years. For example, data privacy and algorithmic bias are important factors shaping the societal impact of AI technologies (Binns, 2018).

The Role of Artificial Intelligence in Daily Life

1. Healthcare Services

AI is improving diagnostic and especially treatment planning processes in the healthcare sector. For example, IBM's Watson platform, as a clinical decision support system, assists doctors in determining the most appropriate treatment options for cancer patients (Somashekhar et al., 2018; Zhou et al., 2021).

2. Education

Personalized learning platforms offer instructional plans tailored to students' individual needs. Platforms such as Duolingo and Khan Academy use artificial intelligence effectively (Holmes et al., 2019).

3. Security

AI-based security systems optimize crime prevention and surveillance processes. For example, facial recognition systems are integrated with security cameras to enhance urban security (Perry et al., 2013).

4. E-Commerce

AI applications that enhance customer satisfaction (Smith & Linden, 2017). For example, platforms like Amazon and Netflix analyze user habits using such tools and offer personalized recommendations.

5. Daily Life

Virtual assistants such as Siri, Alexa, and Google Assistant facilitate users' daily tasks. Additionally, smart home systems play an important role in energy conservation.

In summary, AI is rapidly becoming widespread as a technology that simplifies and makes human life more efficient. However, the ethical and security dimensions of this technology must also be carefully addressed. Understanding the fundamental concepts of AI and its role in daily life will ensure that individuals and societies benefit from this technology in the best way possible.

THE CONCEPT OF HAPPINESS AND ITS IMPORTANCE IN URBAN LIFE

Happiness can be defined as a sustainable state of well-being and satisfaction in which an individual, in alignment with the values, goals, and expectations in their life, feels balance and wholeness at the physical, mental, and emotional levels—not limited to momentary pleasures—and is enabled to positively experience the meaning of life and their own existence. Happiness is not only at the individual level; it is also an important concept that affects societal welfare. The happiness of individuals living in cities is greatly influenced by the physical and social structures of cities. In this section, the relationship between individual happiness and societal welfare is examined, and the main factors affecting happiness in cities are discussed.

Individual Happiness and Societal Welfare

1. Individual Happiness

Individual happiness is the dominance of satisfaction and positive emotions that a person feels about their own life (Diener, 1984). Research shows that individual happiness is related to multiple factors, including health, economic status, social relationships, and personal achievement (Lyubomirsky et al., 2005).

Key Components:

- **Physical Health:** Individuals who are healthy have higher happiness levels. Happy people cope with stress better, which strengthens their immune systems and reduces their risk of cardiovascular diseases. Happy individuals tend to invest more in their health. They are more likely to eat healthier, exercise regularly, and avoid harmful habits such as smoking. Furthermore, happiness positively affects an individual's lifespan by reducing mortality rates (Veenhoven, 2008).
- **Social Bonds:** Diener and Seligman (2002) examined individuals in the top 10% who described themselves as "happiest" in their study. They concluded that the single most distinctive and invariable factor distinguishing these individuals from others was their possession of "extremely satisfying and rich social relationships." It was further noted that time spent with family, friends, and partners, along with the quality of these relationships, is the main source of daily positive emotions.
- **Personal Achievement and Meaning:** Ryff (1989) argues that happiness is not solely about positive emotions but also about an individual "realizing their potential" and "leading a meaningful life."

2. Societal Welfare

Societal welfare is a collective condition formed by the coming together of individuals' life satisfaction, psychological well-being, and social integration levels (Keyes, 1998; Diener, 2000). In this context, every individual's happiness and well-being is both a determinant and sustainer of the overall welfare level of society (Veenhoven, 2008). In a society with a high level of welfare (Dragolov et al., 2016; Frey & Stutzer, 2002; Putnam, 2000):

- Economic growth is achieved.
- Social cohesion increases.
- Individuals' solidarity and sense of belonging are strengthened.

Example: The United Nations' "World Happiness Report" (2021) revealed that countries with high social trust and welfare also had high happiness levels.

Factors Affecting Happiness in Cities

Urban life deeply affects individuals' ways of living; this effect is shaped by the fact that the elements that increase or decrease happiness mostly stem from infrastructure, environment, and social dynamics.

1. Physical Environment

- **Green Spaces and Nature:** Parks, gardens, and other green spaces reduce individuals' stress and increase happiness levels (Ulrich et al., 1991).
- **Transportation and Infrastructure:** Easily accessible and modern infrastructure facilitates the daily lives of city residents, increasing their satisfaction (Lee & Sener, 2016; Bahadir & Kart-Aktas, 2023).

2. Social Dynamics

- **Community Relations:** Neighborhood relationships and social solidarity directly affect the happiness of individuals living in the city (Yu et al., 2019).
- **Security:** A safe city enables individuals to live in peace and increases the level of welfare (Ghose & Etowa, 2022; Varela et al., 2020).

3. Economic Factors

- **Employment Opportunities:** The expansion of employment opportunities contributes to a significant increase in both material welfare and subjective happiness levels by raising individuals' income levels and economic security (Winkelmann & Winkelmann, 1998).
- **Income Equity:** Fair income distribution is an important factor that strengthens societal welfare (Wilkinson & Pickett, 2009).

4. Urban Planning

Well-planned cities offer physical and social spaces that meet individuals' needs (Montgomery, 2013). For example:

- **Smart City Projects:** These projects use technology to improve the quality of life for city residents (Caragliu et al., 2011).

- **Cultural and Artistic Events:** These events meet the social and cultural needs of city residents (Florida, 2002).

5. Environmental Factors

- **Air Quality:** Air pollution negatively affects happiness (Schlenker & Walker, 2016).
- **Sustainability:** Building cities with environmentally friendly approaches increases individuals' happiness (Beatley, 2011; Pretty et al., 2007).

Conclusion

Happiness is the fundamental building block of individual and societal welfare. The happiness of individuals living in cities depends not only on individual factors but also on the physical, social, and environmental characteristics of cities. Adopting a happiness-centered approach in urban planning will ensure that individuals and communities live healthier and more prosperous lives.

THE RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE AND HAPPINESS

Artificial intelligence (AI) is used across a wide spectrum with the aim of improving individuals' quality of life and contributing to societal welfare. Research conducted after 2020 has revealed that the impact of AI on happiness creates striking effects not only at the individual level but also in community projects (Kaplan & Haenlein, 2020). In this section, AI's contributions to individual happiness and its applications in community projects are examined.

Contributions of Artificial Intelligence to Individual Happiness

1. Mental Health and Psychological Support

AI-based applications support individuals' mental health. For example, chatbot-based applications like Woebot provide 24/7 support to individuals with mental health issues such as depression and anxiety (Fitzpatrick et al., 2022). Additionally, meditation and mindfulness applications (e.g., Calm, Headspace) enable AI to analyze user behavior and deliver personalized content.

2. Personalized Experiences in Education

AI makes learning more effective by personalizing educational processes. For example, platforms like Duolingo and Khan Academy strengthen the individual learning experience by offering content tailored to students' learning pace and needs (Holmes et al., 2019).

3. Smart Home Systems and Daily Life

AI simplifies individuals' lives through smart home devices. Devices like Nest Thermostat learn individuals' energy consumption habits, providing both energy savings and comfort (Smith et al., 2022).

4. Health Technologies

AI helps individuals adopt healthier lifestyles by analyzing their health data. For example, applications like Apple Health optimize users' sleep, diet, and exercise habits. Studies in the literature also support this effect, demonstrating that wearable technologies are effective tools for increasing physical activity and improving health parameters (Ferguson et al., 2022). Furthermore, these AI-supported systems process multi-layered data to deliver individualized 'high-performance' health management (Topol, 2019).

Use of Artificial Intelligence in Community Projects

1. Smart City Applications

AI is used in urban management to solve critical issues such as optimizing traffic, conserving energy, and reducing pollution (Batty et al., 2018). For example, the AI-Powered Smart Nation Platform used in Singapore improves the quality of life for city residents by enhancing traffic flow and optimizing energy management.

2. Equity and Access in Healthcare Services

AI increases societal welfare by enabling early diagnosis of diseases in public health projects. For example, during the COVID-19 pandemic, AI models were used to predict the spread rate of the outbreak and take effective measures (Chen et al., 2021).

3. Accessibility in Education

AI provides equality of opportunity in access to education. Tools such as Microsoft Translator create an inclusive learning environment by eliminating language barriers between individuals who speak different languages (Nguyen et al., 2021).

4. Community Participation and Equality

AI offers tools that strengthen social justice in community projects. For example, the AI4People initiative, which resonated across Europe, has provided an ethical framework to protect societal values and promote social justice (Floridi et al., 2018).

Conclusion

Artificial intelligence stands out as a transformative force in increasing individuals' happiness and in community projects. AI applications in areas such as health, education, urban planning, and social justice provide significant contributions to individual and societal welfare. However, addressing challenges such as ethical issues, data privacy, and algorithmic bias is critically important for ensuring the sustainable use of this technology.

TRANSFORMATION IN PROFESSIONAL FIELDS WITH AI-SUPPORTED SOLUTIONS

Artificial intelligence (AI) is creating transformation in many areas, from individual life to community projects. In sectors such as education, health, security, agriculture, and spiritual guidance, the innovative solutions offered by AI are increasing efficiency and contributing to quality of life. How AI is reshaping the professional world is examined in this section with scientific research and concrete application examples.

1. Education: Applications That Increase Student Success

Adaptive Learning Platforms

Digital learning environments such as Khan Academy and Coursera break the 'one-size-fits-all' approach in education by offering structures that adapt to students' individual learning

paces. Research shows that these AI-supported or self-paced systems detect students' knowledge gaps with real-time data and significantly increase academic success rates through personalized content recommendations (Chen et al., 2020).

Automated Assessment Systems

GradeScope, one of the AI-based automated assessment tools, was specifically developed to standardize and accelerate exam grading processes in crowded classrooms. Unlike traditional methods, these systems have the ability to recognize handwriting and group similar answers. Research has shown that the use of GradeScope reduces the time educators spend on grading by up to 50% while also increasing instructional efficiency by providing faster and more consistent feedback to students (Singh et al., 2017).

Access and Equity

The language barrier, one of the biggest obstacles to equality of opportunity in education, has begun to be overcome with speech-to-text technologies such as Microsoft Translator. These tools enable real-time access to course materials for students whose native language differs from the language of instruction. Findings in the literature emphasize that AI-supported translation tools bridge communication gaps in multilingual classrooms and support the more equitable inclusion of disadvantaged groups in the learning ecosystem (Lee, 2020).

2. Health: Mental Health and Stress Management Tools

Mental Health Applications

Woebot helps users manage symptoms of depression and anxiety, providing a 30% improvement in their mental health (Fitzpatrick et al., 2017).

Imaging and Diagnosis

One of the groundbreaking studies in medical imaging is the AI model developed by Google Health. The study published in the journal Nature proved that this AI system can perform at a higher level than expert radiologists in mammography screenings. The system significantly improves diagnostic accuracy and patient comfort by reducing 'false positive' rates—which lead

patients to unnecessary stress and biopsies—by 5.7% in US data and 1.2% in UK data in cancer screenings (McKinney et al., 2020).

Stress Management

Calm, one of the leading applications in the digital health market, stands out as an effective tool in stress management with its personalized meditation and breathing exercises. In an experimental study conducted on university students, a significant reduction in stress levels was found in the group that regularly used the Calm application compared to the control group. Research findings confirm that such mobile interventions (mHealth) offer an accessible solution, particularly in preventing stress from becoming chronic and in increasing mindfulness (Huberty et al., 2019).

3. Security: Technological Solutions for Peaceful Living Spaces

AI offers effective solutions in areas such as crime prevention, disaster management, and traffic flow optimization.

- **Predictive Policing**

  Predictive Policing, which offers a data-driven approach in crime prevention strategies, aims to predict the probable locations of future incidents by analyzing past crime data. Controlled field experiments conducted in collaboration with the Los Angeles Police Department (LAPD) on the PredPol algorithm showed that patrol routes generated by the algorithm were statistically more successful in reducing crime rates compared to human analysts' predictions. Study results document that such algorithmic guidance reduced crime rates by 7.4% (higher in some areas) and allowed for more efficient use of police resources (Mohler et al., 2015).

- **Natural Disaster Management**

  AI technologies play a critical role in the 'preparedness' and 'response' phases of minimizing the devastating effects of natural disasters. AI systems that process seismic data and meteorological models can perform post-disaster damage assessment and rescue route planning much faster than human intervention. Current research in the literature reveals

that machine learning-supported disaster management systems shorten emergency teams' decision-making times and minimize the risk of loss of life by increasing spatial accuracy in rescue operations (Sun et al., 2020).

- **Smart Traffic Management**

  Singapore's AI-supported traffic management systems, implemented as part of the 'Smart Nation' initiative, are among the most successful examples of optimizing intra-city mobility. These systems analyze real-time flow from traffic sensors and GPS data and dynamically adjust traffic lights according to instantaneous density. Analyses show that these integrated systems play a proactive role in preventing congestion, increase public transportation efficiency, and provide savings of 15–20% in city residents' daily travel times (Cheong & Cheah, 2018).

4. Spiritual Guidance: AI-Supported Spiritual Approaches

AI provides personalized content and support solutions in spiritual guidance.

- **Access to Religious Knowledge**

  Rather than replacing religious officials, AI serves them as a "cognitive partner" by alleviating the data processing burden. Religious officials enrich content production by utilizing AI algorithms in the processes of analyzing sacred texts and relating them to current events (Cheong, 2020).

- **Spiritual Support Chatbots**

  Robots such as SanTO (Sanctified Theomorphic Operator), developed especially for the elderly, can engage in religious dialogue with users and offer prayer companionship. Research has proven that such spiritual interfaces reduce users' sense of loneliness and help them maintain their religious practices (Trovato et al., 2019).

5. Agriculture and Environment: AI Solutions for Sustainability

AI offers effective and sustainable solutions in agriculture and environmental management.

- **Precision Management in Agriculture**

  AI-supported computer vision systems distinguish weeds from crops in the field, enabling spraying only in the required areas. This technology, known as "See and Spray," reduces herbicide use by up to 90% compared to traditional methods, providing both cost savings and reducing the chemical burden on the soil (Talaviya et al., 2020).

- **Climate and Environmental Management**

  Machine learning algorithms can predict risks associated with climate change by analyzing weather data, soil moisture, and past harvest statistics. These models prevent resource waste by providing data-driven recommendations on planting and harvest timing to farmers, and increase agricultural productivity under uncertain climatic conditions (Khandelwal & Chavhan, 2019).

Conclusion

AI offers innovative solutions across a wide spectrum, from education to health, from security to spiritual guidance, addressing the needs of individuals and communities. Concrete application examples and scientific studies demonstrate AI's effects in these areas. However, using this technology in accordance with ethical responsibility and data privacy principles is critically important for a sustainable future.

AI-SUPPORTED ACADEMIC SOLUTIONS: NEW HORIZONS IN EDUCATION AND LEARNING

Artificial intelligence (AI) is revolutionizing education and learning processes by providing individualized experiences, rapid feedback, and accessibility. Modern digital platforms and applications harness the power of AI to meet students' learning needs and enhance academic success. In this section, applications such as ChatGPT and DeepL, along with other AI-supported academic tools, are examined with scientific data and concrete examples.

1. AI-Supported Language and Writing Tools

AI-based language and writing tools provide support to students and academics in processes such as writing, editing, and translating academic texts.

a) ChatGPT and Similar Applications

- **ChatGPT (OpenAI):** Large language models such as ChatGPT, developed by OpenAI, serve students as a personalized education assistant for brainstorming, creating research drafts, and summarizing complex concepts. These tools support critical thinking skills and offer significant opportunities to educators and students in overcoming 'writer's block' and creating content frameworks (Kasneci et al., 2023).
- **Gemini (Google):** This model, developed by Google, can process text, visual, and code data simultaneously thanks to its 'multimodal' structure, rather than being solely text-based. This feature provides in-depth support in academic literature review and data analysis by allowing researchers to analyze complex graphs and establish logical connections between different data types (Gemini Team, Google, 2023).

b) Translation and Language Tools

- **DeepL:** Maintaining context is vitally important in academic translations. Deep learning-based DeepL provides more natural and human-like fluency when transferring idiomatic expressions and academic terminology to the target language compared to other machine translation tools. Research shows that DeepL minimizes syntactic errors particularly in technical text translations and is more successful in preserving semantic integrity (Hidalgo-Ternero, 2021).
- **Grammarly:** Automatic Writing Evaluation (AWE) systems such as Grammarly not only correct surface-level grammar errors but also improve the readability of texts. Reviews have shown that this tool helps students diversify their vocabulary and develops writing skills by providing instant feedback, particularly on conformity to academic writing standards (tone, clarity) (Fitria, 2021).

2. Adaptive Learning and Online Education Platforms

AI-supported learning platforms offer customized solutions tailored to students' individual learning needs.

a) Adaptive Education Tools

- **Khan Academy and Smart Sparrow:** Unlike the traditional 'one-size-fits-all' education model, AI-supported Intelligent Tutoring Systems (ITS) detect students' knowledge gaps in real time. Platforms like Khan Academy and Smart Sparrow create a personalized 'knowledge map' for each student, offering additional exercises and guidance on challenging topics. Extensive meta-analyses have proven that such adaptive systems significantly increase students' academic achievement scores compared to traditional methods (Zhai et al., 2021).
- **Example from Turkey – Doping Hafiza:** Doping Hafiza, widely used in Turkey, combines 'spaced repetition' and visualization techniques with AI algorithms. The system analyzes the user's forgetting curve and creates a personalized study program. While user satisfaction is high according to the platform's own data, the fundamental scientific mechanism behind this success is AI's ability to time content according to the working principles of human memory (spaced learning) (Tabibian et al., 2019).

3. Virtual Learning and Simulation Technologies

AI offers learning-by-experience opportunities through virtual reality (VR) and augmented reality (AR) based applications.

- **Labster and Similar Virtual Laboratories:** Virtual Reality (VR) and Augmented Reality (AR) allow students to practice experiments that could be costly or dangerous in the physical world in a safe environment (through virtual laboratories such as Labster). Systematic reviews have shown that such 'immersive' technologies consistently increase student engagement and intrinsic motivation compared to traditional methods and facilitate the concretization of abstract concepts (Di Natale et al., 2020).

4. Academic Research and Data Analysis Tools

AI-based tools developed for academic studies and data analyses facilitate researchers' work.

a) Bibliographic Analysis and Citation Management

- **Zotero and Mendeley:** Tools such as Zotero and Mendeley automate reference management, reducing researchers' risk of manual errors. Comparative analyses show that

these tools provide significant time savings and standardize academic workflows not only in bibliography creation but also in PDF-based metadata capture and research collaboration processes (Ivey & Crum, 2018).

b) Data Visualization and Analysis

- **Tableau and Power BI:** Business Intelligence (BI) tools such as Tableau and Power BI, used for the analysis of large data sets, enable researchers to make sense of complex data without the need for coding knowledge. Research on these tools has proven that data visualization reduces researchers' 'cognitive load,' enables faster discovery of hidden patterns within data, and accelerates decision-making processes (Ain et al., 2019).

5. Emotional and Social Learning Tools

AI supports learning processes by increasing students' emotional well-being.

- **Woebot:** Woebot combines Cognitive Behavioral Therapy (CBT) principles with AI algorithms to provide 24/7 emotional support to students. In randomized controlled studies conducted by Stanford University researchers, it was proven that students who interacted with Woebot showed a statistically significant reduction in depression and anxiety symptoms compared to the control group that only read informational e-books (Fitzpatrick et al., 2017).

Conclusion

AI offers innovative solutions in many areas, including individualized learning, rapid feedback, translation, and academic support in education. Applications such as ChatGPT, DeepL, and Khan Academy have made the learning process more accessible and effective while increasing students' academic success. Scientific data clearly demonstrate that these AI-supported tools positively contribute to learning processes. However, attention to data security and ethical use is critically important for the long-term success of these technologies.

REFERENCES

Ain, N., Vaia, G., DeLone, W. H., & Waheed, M. (2019). Two decades of research on business intelligence system adoption: A systematic literature review. *Decision Support Systems*, 125, 113113. https://doi.org/10.1016/j.dss.2019.113113

Bahadir, B., & Kart Aktaş, N. (2023). Evaluating the urban quality of life: A study in an urban residential environment in İstanbul, Türkiye. *Forestist, 73*(3), 285–296. https://doi.org/10.5152/forestist.2023.22056

Batty, M., Axhausen, K. W., Pozdnoukhov, A., vd. (2018). Artificial intelligence and smart cities. *Journal of Urban Planning, 36*(3), 245-260. https://doi.org/10.1177/2399808317751169

Beatley, T. (2011). *Biophilic cities: Integrating nature into urban design and planning.* Island.

Binns, R. (2018). Fairness in machine learning: Lessons from political philosophy. *Proceedings of the 2018 Conference on Fairness, Accountability, and Transparency, 81* (ss. 149–159). PMLR. http://proceedings.mlr.press/v81/binns18a.html

Caragliu, A., Del Bo, C., & Nijkamp, P. (2011). Smart cities in Europe. *Journal of Urban Technology, 18*(2), 65-82.

Chen, J., See, K. C., Doroslovacki, M., Li, J., Liu, A., Cheng, Y., ... & Yu, P. S. (2021). A survey on applications of artificial intelligence in fighting against COVID-19. *ACM Computing Surveys (CSUR)*, 54(8), 1-32. https://doi.org/10.1145/3465398

Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access*, 8, 75264-75278. https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9069875

Cheong, P. H. (2020). Religion, robots, and rectitude: Communicative affordances for spiritual knowledge and community. *Applied Artificial Intelligence*, *34*(3), 232-249. https://doi.org/10.1080/08839514.2020.1723869

Cheong, S. A., & Cheah, L. (2018). *Smart Nation: The Singapore Journey*. In *Smart Cities: Issues and Challenges* (pp. 251-270). Elsevier.

Di Natale, A. F., Repetto, C., Riva, G., & Villani, D. (2020). Immersive virtual reality in K-12 and higher education: A 10-year systematic review of empirical research. *British Journal of Educational Technology*, *51*(6), 2006-2033. https://doi.org/10.1111/bjet.13030

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542–575. https://doi.org/10.1037/0033-2909.95.3.542

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist, 55*(1), 34–43.

Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science, 13*(1), 81-84. https://doi.org/10.1111/1467-9280.00415

Dragolov, G., Ignácz, Z. S., Lorenz, J., Delhey, J., Janmaat, J. G., & Boehnke, K. (2016). *Social cohesion in the western world: What holds societies together: Insights from the social cohesion radar.* Springer.

Ferguson, T., Olds, T., Curtis, R., Blake, H., Crozier, A. J., Dankiw, K., ... & Maher, C. (2022). Effectiveness of wearable activity trackers to increase physical activity and improve health: a systematic review of systematic reviews and meta-analyses. *The Lancet Digital Health, 4*(8), e615-e626.

Fitria, T. N. (2021). Grammarly as AI-powered English writing assistant: Students' alternative for writing properly. *Metathesis: Journal of English Language, Literature, and Teaching*, *5*(1), 65-78. https://doi.org/10.31002/metathesis.v5i1.3519

Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): a randomized controlled trial. *JMIR Mental Health*, 4(2), e19. https://doi.org/10.2196/mental.7785

Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2022). Chatbot-based mental health interventions. *JMIR Mental Health, 9*(1), e23719.

Florida, R. (2002). *The rise of the creative class.* Basic Books.

Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., ... & Vayena, E. (2018). AI4People: An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. *Minds and Machines*, *28*(4), 689-707.

Frey, B. S., & Stutzer, A. (2002). *Happiness and economics: How the economy and institutions affect human well-being.* Princeton University.

Gemini Team, Google. (2023). Gemini: A family of highly capable multimodal models. *arXiv preprint arXiv:2312.11805*. https://doi.org/10.48550/arXiv.2312.11805

Ghose, B., & Etowa, J. (2022). Relationship between self-reported neighborhood safety and happiness and life satisfaction among women in low-middle income countries. *Safety, 8*(2), 31. https://doi.org/10.3390/safety8020031

Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep Learning*. MIT.

Helliwell, J. F., Layard, R., Sachs, J. D., & De Neve, J.-E. (Ed.). (2021). *World Happiness Report 2021*. Sustainable Development Solutions Network. https://files.worldhappiness.report/WHR21.pdf?_gl=1*ub2h27*_gcl_au*MTY3NTU0MTgzMC4xNzYzNDg1Mjgy

Hidalgo-Ternero, C. M. (2021). Can DeepL replace human translators in the translation of phraseological units? A contrastive analysis (En/Es/En). *MonTI. Monografías de Traducción e Interpretación*, (Special Issue 7), 153-179. https://doi.org/10.6035/MonTI.2021.ne7.5

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promise and implications for teaching and learning*. Center for Curriculum Redesign.

Huberty, J., Green, J., Glissmann, C., Larkey, L., Puzia, M., & Lee, C. (2019). Efficacy of the mindfulness meditation mobile app "Calm" to reduce stress among college students: randomized controlled trial. *JMIR mHealth and uHealth*, *7*(6), e14273. https://doi.org/10.2196/14273

Ivey, C., & Crum, J. (2018). Choosing the right citation management tool: EndNote, Mendeley, RefWorks, or Zotero. *Journal of the Medical Library Association*, 106(3), 399–403. https://doi.org/10.5195/jmla.2018.468

Kaplan, A., & Haenlein, M. (2020). Rulers of the world, unite! The challenges and opportunities of artificial intelligence. *Business Horizons*, 63(1), 37–50.

Kasneci, E., et al. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. https://doi.org/10.1016/j.lindif.2023.102274

Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly, 61*(2), 121–140. https://doi.org/10.2307/2787065

Khandelwal, P. M., & Chavhan, H. (2019). Artificial intelligence in agriculture: An emerging era of research. *Research Gate Publication*, *1*(1), 56-60.

Lee, R. J., & Sener, İ. N. (2016). Transportation planning and quality of life: Where do they intersect? *Transport Policy, 48*, 146–155. https://doi.org/10.1016/j.tranpol.2016.03.004

Lee, S. M. (2020). The impact of using machine translation on EFL students' writing. *Computer Assisted Language Learning*, *33*(3), 157-175. https://doi.org/10.1080/09588221.2018.1553186

Lis-Gutiérrez, J. P., & Pulido-Flórez, J. S. (2024). Creaciones artísticas musicales e Inteligencia Artificial (2019-2022). *El oído Pensante, 12*(1). https://doi.org/10.34096/oidopensante.v12n1.12176

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, *9*(2), 111–131. https://doi.org/10.1037/1089-2680.9.2.111

McCarthy, J. (2007). *What is artificial intelligence.* http://cse.unl.edu/~choueiry/S09-476-876/Documents/whatisai.pdf adresinden 03.01.2025 tarihinde erişilmiştir.

McKinney, S. M., Sieniek, M., Godbole, V., vd. (2020). International evaluation of an AI system for breast cancer screening. *Nature, 577*(7788), 89-94.

Mohler, G. O., Short, M. B., Malinowski, S., Johnson, M., Tita, G. E., Bertozzi, A. L., & Brantingham, P. J. (2015). Randomized controlled field trials of predictive policing. *Journal of the American Statistical Association*, *110*(512), 1399-1411. https://doi.org/10.1080/01621459.2015.1077710

Montgomery, C. (2013). *Happy city: Transforming our lives through urban design.* Farrar, Straus and Giroux.

Moore, M., & Sharma, P. (2021). Updates in artificial intelligence in gastroenterology endoscopy in 2020. *Current Opinion in Gastroenterology*, *37*(5), 428-433. https://doi.org/10.1097/MOG.0000000000000774

Nguyen, P., Wang, S., & Zhu, X. (2021). Enhancing educational access through AI technologies. *Journal of Learning Analytics, 8*(1), 45-62.

Perry, W. L., McInnis, B., Price, C. C., Smith, S., & Hollywood, J. S. (2013). *Predictive policing: The role of crime forecasting in law enforcement operations*. RAND Corporation. https://doi.org/10.7249/RR233

Pretty, J., Peacock, J., Hine, R., King, M., South, N., & Griffin, M. (2007). Green exercise in the UK: A survey of primary benefits and values. *Science and Public Policy, 34*(5), 312–321.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community.* Simon & Schuster.

Russell, S. J., & Norvig, P. (2020). *Artificial Intelligence: A Modern Approach* (4th ed.). Pearson.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Schlenker, W., & Walker, W. R. (2016). Airports, air pollution, and contemporaneous health. *The Review of Economic Studies*, 83(2), 768–809.

Sheikh, H., Prins, C., & Schrijvers, E. (2023). Artificial intelligence: Definition and background. In *Mission AI the new system technology* (ss. 15-42). Springer. https://doi.org/10.1007/978-3-031-21448-6

Singh, A., Karayev, S., Gutman, E., & Abbeel, P. (2017). Gradescope: a fast, flexible, and fair system for scalable assessment of handwritten work. *Proceedings of the Fourth (2017) ACM Conference on Learning@ Scale*, 81-88. https://sergeykarayev.com/files/gradescope_las_2017.pdf

Smith, B., & Linden, G. (2017). Two decades of recommender systems at Amazon.com. *IEEE Internet Computing*, *21*(3), 12–18. https://doi.org/10.1109/MIC.2017.72

Smith, J., Johnson, R., & Lee, T. (2022). AI in Education: Automating assessments and reducing teacher workloads. *Education Technology Journal, 19*(3), 124-132.

Somashekhar, S. P., Sepúlveda, M. J., Puglielli, S., Norden, A. D., Shortliffe, E. H., Rohit Kumar, C., ... & Rhee, K. (2018). Watson for Oncology and breast cancer treatment recommendations: Agreement with an expert multidisciplinary tumor board. *Annals of Oncology*, *29*(2), 418–423. https://doi.org/10.1093/annonc/mdx781

Sun, W., Bocchini, P., & Davison, B. D. (2020). Applications of artificial intelligence for disaster management. *Natural Hazards*, *103*(3), 2631-2689.

Tabibian, B., Upadhyay, U., De, A., Zarezade, A., Schölkopf, B., & Gomez-Rodriguez, M. (2019). Enhancing human learning via spaced repetition optimization. *Proceedings of the National Academy of Sciences*, *116*(10), 3988-3993. https://doi.org/10.1073/pnas.1815156116

Talaviya, T., Shah, D., Patel, N., Yagnik, H., & Shah, M. (2020). Implementation of artificial intelligence in agriculture for optimisation of irrigation and application of pesticides and herbicides. *Artificial Intelligence in Agriculture,* 4, 58-73. https://doi.org/10.1016/j.aiia.2020.04.002

Topol, E. J. (2019). High-performance medicine: The convergence of human and artificial intelligence. *Nature Medicine, 25*(1), 44-56.

Trovato, G., et al. (2019). Religion and robots: Towards the synthesis of two extremes. *International Journal of Social Robotics*, *11*(4), 539-556.

Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology, 11*(3), 201–230. https://doi.org/10.1016/S0272-4944(05)80184-7

Varela, J. J., Alfaro, J., Melipillán, R., Oyarzún Gómez, D., & González-Carrasco, M. (2020). Perceptions of safety, satisfaction with neighborhood and life satisfaction among Chilean adolescents. *Child Indicators Research, 13*(4), 1489–1502. https://doi.org/10.1007/s12187-019-09649-z

Veenhoven, R. (2008). Healthy happiness: Effects of happiness on physical health and the consequences for preventive health care. *Journal of Happiness Studies*, *9*(3), 449–469. https://doi.org/10.1007/s10902-006-9042-1

Veenhoven, R. (2008). Sociological theories of subjective well-being. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 44–61). Guilford.

Vera, M. M. S. (2024). Artificial intelligence as a teaching resource: uses and possibilities for teachers. *Educar*, *60*(1), 33-47. https://doi.org/10.5565/rev/educar.1810

Wilkinson, R., & Pickett, K. (2009). *The spirit level: Why more equal societies almost always do better.* Allen Lane.

Winkelmann, L., & Winkelmann, R. (1998). Why are the unemployed so unhappy? *Evidence from panel data. Economica, 65*(257), 1-15.

Xu, T., & Baghaei, S. (2025). Reshaping the future of sports with artificial intelligence: Challenges and opportunities in performance enhancement, fan engagement, and strategic decision-making. *Engineering Applications of Artificial Intelligence*, *142*, 109912. https://doi.org/10.1016/j.engappai.2024.109912

Xu, Y., Liu, X., Cao, X., Huang, C., Liu, E., Qian, S., ... & Zhang, J. (2021). Artificial intelligence: A powerful paradigm for scientific research. *The Innovation*, *2*(4), 1-20. https://doi.org/10.1016/j.xinn.2021.100179

Yu, R., Cheung, O., Leung, J., Tong, C., Lau, K., Cheung, J., & Woo, J. (2019). Is neighbourhood social cohesion associated with subjective well-being for older Chinese people? The neighbourhood social cohesion study. *BMJ Open,* *9*(5), e023332. https://doi.org/10.1136/bmjopen-2018-023332

Zhai, X., Chu, X., Chai, C. S., Jong, M. S. Y., Istenic, A., Spector, M., ... & Li, Y. (2021). A review of artificial intelligence (AI) in education from 2010 to 2020. *Complexity*, 2021, Article ID 8812542. https://doi.org/10.1155/2021/8812542

Zhou, J., Zeng, Z., & Li, L. (2021). A meta-analysis of Watson for Oncology in clinical application. *Scientific Reports*, *11*(1), 5792. https://doi.org/10.1038/s41598-021-84973-5

Zhu, Y., Wen, F., Wu, J., Huang, P., & Zhang, Y. (2025). Identifying highly correlated determinants influencing student nurses' behavioral intention of using generative artificial intelligence (Generative AI): A network analysis. *Nurse Education Today*, 106855. https://doi.org/10.1016/j.nedt.2025.106855