

# Kinds of Human Intelligence

Human and Artificial Intelligence

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# IBU Grading System

DESCRIPTION OF INSTITUTIONAL GRADING SYSTEM

Academic status of the student is calculated according to Numerical System from 5 to 10, 100 Point System, and ECTS by the Student Affairs Office on the basis of all enrolled courses for the degree in question.

The equivalence of the grading systems is shown in table below:

Numerical System from 5 to 10	10		9		8		7		6		5
100 Point System	95-100	90-94	85-89	80-84	75-79	70-74	65-69	60-64	55-59	50-54	<50
ECTS	A		B		C		D		E		F

Conditions for obtaining first cycle studies diploma: Successful completion of courses taken with an advantage of 6 in Numerical System from 5 to 10, 50 points in 100 Point System, and E in ECTS.

## Midterm/final model of exams

### Grade structure

Midterm exam 40 CP

Final Exam 40 CP

Activity 20 CP

## Make-up exam model

### Grade structure

Make-up exam 80CP

Activity 20 CP

## Midterm Exam:

Student will be allowed to enter the midterm exam, if s/he has completed their debt obligations

## Final Exam:

The student will be allowed to enter the final exam if they meet the minimum attendance criteria, have no debt obligations and if they have gained a minimum of 10 CP in the midterm exam

## Conditions for passing the course:

If the students have not gained a minimum of 10CP in the midterm exam and minimum 10CP in the final exam, the student will fail.

## Penalty session

Penalty session exam consists of 100% of the grade and covers the whole material. The penalty session exam period is announced in the academic calendar.

Students who have previously registered for the course, and have failed, have a right to register the course for the penalty session.

A student can register maximum 6 courses in penalty session through the Hello System.

If a student has not previously registered for a course, the student will not be allowed to register that course in the penalty session exam.

# <https://ibu.kirjakovski.mk>

## PROF. KIRJAKOVSKI IBU BLOG

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2021

Jun 12	MAKE-UP EXAM: Computer Aided Education	Computer Aided Education (2020/2021)
Jun 04	IMPORTANT: Repeated Final Exam for Some Students	Social Psychology (2020/2021)
May 24	LECTURE 11: Organizational Theory, Dynamics, and Change	Organizational Psychology (2020/2021)
May 20	COURSE EVALUATION: Organizational Psychology	Organizational Psychology (2020/2021)
May 20	FINAL EXAM: Computer Aided Education	Computer Aided Education (2020/2021)



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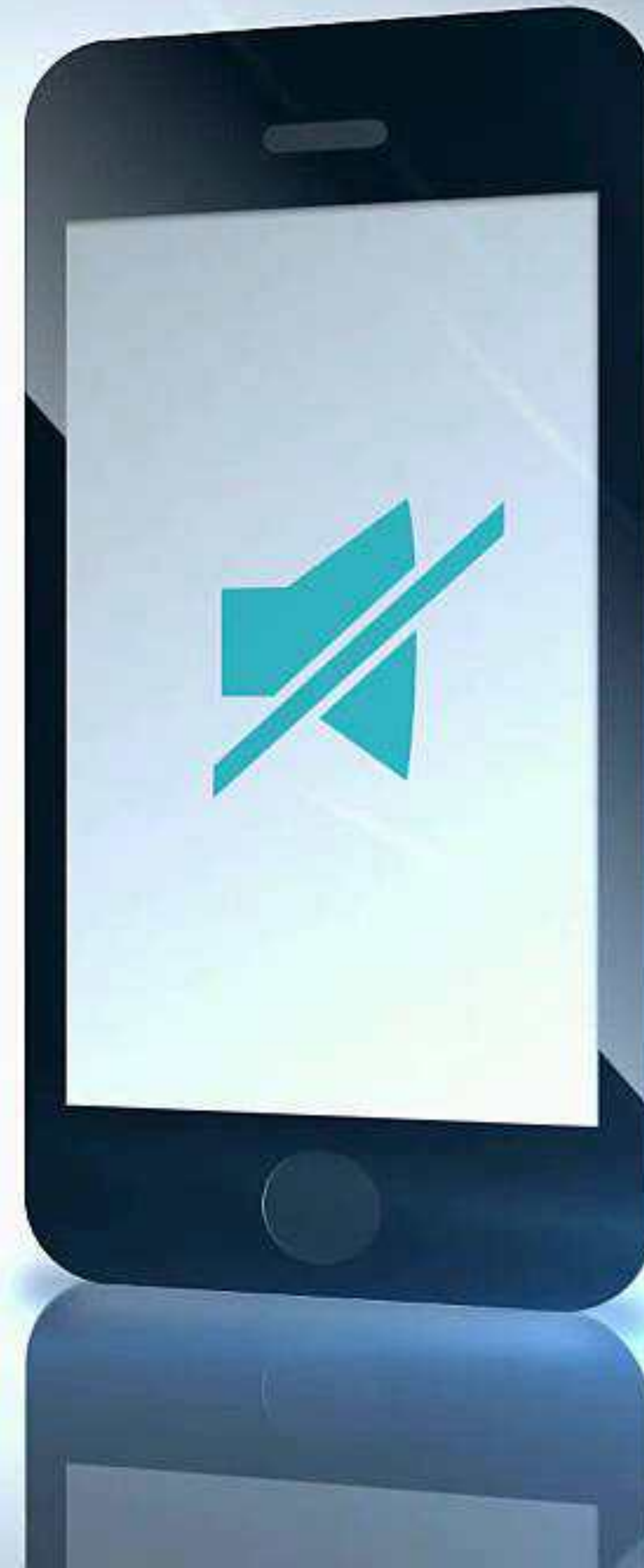
**DO NOT RE-UPLOAD  
THE CONTENT!**

# Academic Calendar

- 3 October 2024, Week 1  
**Introduction to the Concept of Intelligence**
- 10 October 2024, Week 2  
**Measuring Intelligence**
- 17 October 2024, Week 3  
**Theoretical Frameworks of Intelligence**
- 24 October 2024, Week 4  
**Kinds of Human Intelligence**
- 31 October 2024, Week 5  
**Development of Intelligence**
- 7 November 2024, Week 6  
**Biological and Environmental Factors in Intelligence**
- **Midterm Exams (11–16 November 2024)**
- 21 November 2024, Week 7  
**Introduction to Artificial Intelligence**
- 28 November 2024, Week 8  
**Functional Aspects of AI**
- 5 December 2024, Week 9  
**Human vs. Artificial Intelligence**
- 12 December 2024, Week 10  
**Machine Learning and Large Language Models**
- 19 December 2024, Week 11  
**Machine Consciousness**
- 26 January 2024, Week 12  
**Ethical and Societal Implications of AI (+ Review)**
- **Winter Break (30 December – 10 January 2025)**
- **Final Exams (13–18 January 2025)**
- **Make-up Exams (20–25 January 2025)**



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# Alternatives to *g*-Concept

- The “*g*-factor” is a concept in intelligence research that refers to a general intelligence factor. It's derived from the observation that performance on various cognitive tasks tends to be positively correlated.
- This means that individuals who do well on one kind of cognitive task tend to do well on others, suggesting the presence of a common underlying factor. The *g* factor was first proposed by the British psychologist Charles Spearman in the early 20th century.
- Alternative concepts that many people find more appealing than the *g*-concept.





# Gardner's Theory of Multiple Intelligences

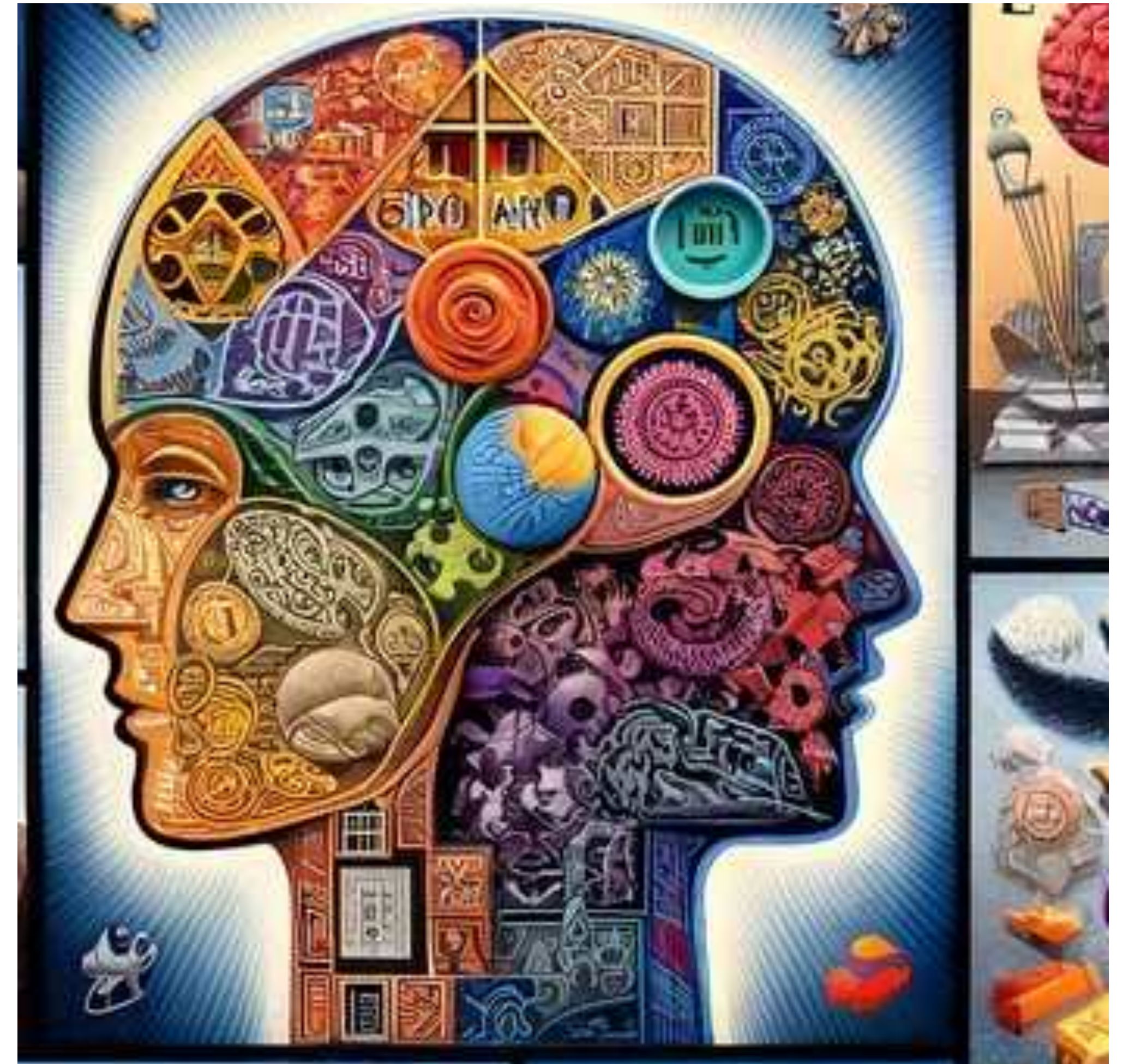
- For Howard Gardner, the *g*-factor is unnecessary. Gardner proposed a model of independent multiple intelligences.
- The following are the basic intelligences, although the list has changed from time to time:
  - **Linguistic intelligence:** The ability to effectively use language for communication, whether through writing, speaking, or reading.
  - **Logico-mathematical intelligence:** The capacity to understand and manipulate numbers, patterns, and logical reasoning.
  - **Spatial intelligence:** The ability to perceive, analyze, and manipulate spatial dimensions and visualize objects accurately.
  - **Musical intelligence:** The skill to produce, recognize, and understand music, rhythm, and sound patterns.
  - **Bodily/kinesthetic intelligence:** The ability to control physical movements and handle objects skillfully.
  - **Interpersonal intelligence:** The capacity to understand and interact effectively with others by perceiving their emotions, intentions, and motivations.
  - **Intrapersonal intelligence:** The ability to understand one's own emotions, motivations, and inner thoughts.
  - **Naturalist intelligence:** The skill to recognize, categorize, and interact with elements of the natural world, including plants, animals, and weather patterns.





# Gardner's Theory of Multiple Intelligences – Issues

- The basis of Gardner's model is not empirical—there are no factor analyses or any other quantitative approach.
- Gardner has not developed any tests of these intelligences. Other researchers have developed tests of the multiple intelligences defined by Gardner, and the tests are correlated with each other— that is, there is a *g*-factor.
- **Conceptual Murkiness:** Critics argue that Gardner's "intelligences" are more like talents or abilities, diluting the traditional concept of intelligence.
- **Lack of Empirical Evidence:** The theory lacks rigorous, scientific validation and relies heavily on qualitative data, making it hard to test or prove.
- **Autonomy of Intelligences:** Research shows cognitive abilities are often correlated, suggesting the intelligences may not be as independent as Gardner claims.
- **Inapplicability in Standardized Testing:** MI is difficult to apply in schools due to the reliance on standardized testing, which doesn't assess context-specific intelligences.
- **Cross-Cultural Validity:** Critics question whether the intelligences are universally valued across different cultures, arguing they may reflect Western biases.
- **Lack of Neurological Evidence:** There is insufficient neurological proof that each intelligence is represented by distinct brain structures.
- **Misinterpretation in Education:** MI is often confused with learning styles, leading to ineffective educational practices.
- **Unscientific Basis:** Critics argue that MI lacks the scientific rigor of hypothesis testing and is more of a philosophical framework than a validated theory.





# Emotional Intelligence

- The term “emotional intelligence” first appeared in the psychological literature in 1990 and was defined as “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions” by Salovey & Mayer.
- However, it was a trade book published in 1995 called *Emotional Intelligence* that introduced the concept of an emotional intelligence to the general public as well as to researchers more broadly by Goleman.
- Models of Emotional Intelligence:
  - **Ability Models:** Emotional intelligence is seen as a set of mental abilities, categorized into four branches: perceiving emotions, using emotions to facilitate thought, understanding emotions, and regulating emotions.
  - **Mixed Models:** These models combine emotional abilities with personality traits and other skills, such as optimism and impulse control. There is evidence that emotional intelligence impacts many aspects of one’s life, including social functioning, academic performance, workplace effectiveness, and health and well-being.





# Emotional Intelligence

- Measurement:
  - **MSCEIT (Mayer-Salovey-Caruso Emotional Intelligence Test):** A widely used test that assesses emotional intelligence based on the four-branch model.
  - **Bar-On EQ-i and TEIQue:** Instruments used for mixed-model measures of emotional intelligence.
- It is correlated with success in various life areas, including social relationships, academic performance, workplace effectiveness, and mental health.
- Emotional intelligence is associated with certain brain regions involved in social cognition and emotional processing.
- Emotional intelligence develops through a combination of innate temperament, learned emotional skills, and self-awareness.
- Some studies suggest that emotional intelligence, especially certain branches like emotion regulation, can be improved through training and interventions.





# Sternberg's Theory of Practical Intelligence

- Sternberg proposed a theory of practical intelligence—called the **TRIARCHIC MODEL**—based on three kinds of intelligence: **analytic** (reasoning skills; most intelligence tests measure this kind of intelligence), **creative** (non-*g*-related ability to originate new ideas; it's difficult to have psychometric tests to measure this), and **practical** (the emphasis in Sternberg's model; it's common sense, and it may include emotional intelligence).
- **Practical Intelligence:** It refers to the ability to adapt, shape, or select environments to meet personal goals, often equated to “street smarts” or “common sense.” It contrasts with analytical intelligence (book smarts).
- Practical intelligence is measured through **situational judgment tests (SJTs)** or **Tacit Knowledge Inventories (TKIs)**, where respondents evaluate practical scenarios and solutions.
- High *g* individuals can lack practical intelligence, and as a result, do unintelligent things.
- These three components were not derived by traditional factor analysis; they were based on theoretical distinctions, but Sternberg has developed tests for all three.
- Sternberg recognizes that *g* exists. His main argument is that these three components are more important than *g*, and that, unlike *g*, they can be taught.





# Sternberg's Theory of Practical Intelligence – Issues

- The problem is that some independent analyses find that any predictive value the Sternberg tests have, can, in fact, can be explained more simply by  $g$ .
- Like many issues in psychology, the bottom line is not yet clear as to whether the Sternberg model improves on or expands the basic  $g$  concept.
- It's also important to keep in mind that Sternberg's model is relatively new compared to over 100 years of research on  $g$ , so we'll await more data.





# Social Intelligence

- In Thorndike's classic formulation: "By social intelligence is meant the ability to understand and manage men and women, boys and girls – to act wisely in human relations."
- Vernon (1933) provided the most wide-ranging definition of social intelligence as the "ability to get along with people in general, social technique or ease in society, knowledge of social matters, susceptibility to stimuli from other members of a group, as well as insight into the temporary moods or underlying personality traits of strangers."
- Researchers consistently faced challenges developing valid performance-based assessments. Tests like the **Magdeburg Test of Social Intelligence** made progress but still revealed multidimensional constructs and validation issues.
- Social intelligence remains a debated concept, with some advocating for neuroscientific approaches, while others propose focusing on practical social knowledge rather than psychometric rankings.





# Collective Intelligence

- The single-brain intelligence is not the only kind of intelligence on our planet.
- It would not be surprising to say that animals have intelligence and many people would say that computers also have a kind of (artificial) intelligence.
- **Collective intelligence:** Refers to groups acting collectively in ways that seem intelligent. This includes human groups (e.g., teams, companies) and other entities (e.g., markets, economies). Even though collective stupidity is just as possible as collective intelligence, these collectively intelligent groups are often the most intelligent entities on our planet.
- Components of Collective Intelligence:
  - **Task-Relevant Abilities:** Group members should possess relevant knowledge to solve a problem.
  - **Interpersonal Abilities:** Groups need emotional and social intelligence to work together effectively.
  - **Diversity:** Cognitive diversity can enhance collective intelligence, though too much diversity may cause coordination issues.





# Collective Intelligence

- **Specialized vs. General Collective Intelligence:**
  - Specialized Collective Intelligence focuses on specific tasks and processes that groups engage in, such as idea generation, decision-making, and negotiation.
  - General Collective Intelligence suggests that groups, like individuals, can have a general ability to perform across different tasks.
- **Factors Influencing Collective Intelligence:**
  - Motivation: Both extrinsic (monetary rewards) and intrinsic (internal satisfaction) motivations can drive group performance.
  - Coordination: Effective coordination processes are crucial for managing dependencies among group activities.
- **Collective Intelligence vs. Collective Stupidity:** Groups can be smarter or less intelligent than their members depending on how they integrate diverse perspectives or block alternative views.





# Leadership Intelligence

- **Leadership and Effectiveness:** Effective leaders significantly impact organizational performance, and leadership effectiveness is influenced by a combination of a leader's cognitive, emotional, and social intelligence.
- **Trait Theory and Leadership:** No single trait has been consistently proven to determine leadership effectiveness. Instead, leadership is understood as an interaction between personal characteristics and situational factors.
- **Leadership intelligence is not a distinct form of intelligence.** Rather, leadership requires using multiple forms of intelligence, including cognitive intelligence (logical problem-solving), emotional intelligence (understanding and managing emotions), and social intelligence (building relationships).
- **Leadership Styles:** Different leadership styles, such as transformational and transactional, have varying effectiveness depending on the context. Transformational leadership, which emphasizes vision and innovation, is generally more effective in complex and dynamic situations.
- **Dark Side of Leadership:** Traits such as narcissism and authoritarianism can negatively impact leadership effectiveness, but some studies suggest that a moderate level of these traits may be beneficial under certain conditions.





# Cultural Intelligence

- **Cultural intelligence:** Refers to an individual's capability to function effectively in situations characterized by cultural diversity.
- The idea of CQ emerged in response to increased globalization and cultural conflicts. CQ is considered essential for harnessing the benefits of cultural diversity and managing conflicts.
- **CQ dimensions:**
  - Metacognitive CQ: Awareness and strategic thinking during cross-cultural interactions.
  - Cognitive CQ: Knowledge of different cultural norms, practices, and conventions.
  - Motivational CQ: Interest and confidence in engaging with culturally diverse settings.
  - Behavioral CQ: The ability to adapt verbal and nonverbal behavior to fit different cultural contexts.
- CQ is measured through various self-reports and performance-based measures. The Cultural Intelligence Scale (CQS) is a widely validated tool.





# Mating Intelligence

- **Mating Intelligence:** It involves higher-level cognitive processes that impact mating, like cross-sex mind reading, strategic flexibility, and interpreting mating cues.
- **Model by Geher, Camargo, and O'Rourke (2008):** This model distinguishes between two components—**fitness indicators** (like creativity, humor) and **cognitive mating mechanisms** (like detecting mate interest). Biological sex and life-history strategies (long vs. short-term mating focus) play critical roles in this framework.
- **Indicators of Success:** Mating success is often measured by the ability to attract partners and, in an evolutionary sense, increase reproductive success.
- **Sex Differences:** Men tend to focus on short-term mating strategies, while women prioritize long-term strategies, aligning with parental investment theories.
- **Mating Success and Reproductive Success:** While reproductive success (number of offspring) is challenging to measure due to birth control, mating success (attraction and relationship outcomes) serves as a modern proxy.





# Questions, comments?