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PEDAGOGICAL AND PSYCHOLOGICAL MECHANISMS OF STUDENTS' CAREER GUIDANCE BASED ON THE PERSONALITY-ORIENTED EDUCATION MODEL

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Abstract

This article proposes the "3D Differential Education Model" (Diagnosis – Differentiation – Destination), aimed at addressing key challenges in the modern education system, such as the "conveyor" approach, the late onset of career guidance, and the neglect of students' individual abilities. The model is based on Gardner's Theory of Multiple Intelligences, Holland's Vocational Personality Test, as well as the methodologies of the "Free Choice Room" and the "Project Test." In addition, neurobiological foundations and brain plasticity (based on the views of E. Goziyev), along with the educational experiences of Finland, Estonia, and Singapore, are analyzed. The proposed model enables early identification of children's abilities (ages 3–12) and provides career guidance based on a differentiated curriculum. To evaluate effectiveness, the ERTK formula has been developed, along with coefficients for motivation, practical skills, and adaptability.

Keywords: Career guidance, learner-centered education, differentiated instruction, multiple intelligences, early diagnosis, neuroplasticity, mentoring, efficiency coefficient.

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Introduction

Аннотация

В данной статье предложена модель «3D дифференциального обучения» (Диагностика – Дифференциация – Destination), направленная на устранение таких проблем современной системы образования, как «конвейерный» подход, позднее начало профориентации и игнорирование индивидуальных способностей учащихся. Модель основана на теории множественного интеллекта Гарднера, тесте профессиональной личности Холланда, а также на методиках «Комната свободного выбора» и «Проектный тест». Кроме того, проанализированы нейробиологические основы и пластичность мозга (взгляды Э. Гозиева), а также образовательный опыт Финляндии, Эстонии и Сингапура. Предложенная модель позволяет раннее выявление способностей детей в возрасте 3–12 лет и их профессиональную ориентацию на основе дифференцированной образовательной программы. Для оценки эффективности разработана формула ERTK, а также коэффициенты мотивации, практических навыков и адаптивности.

Ключевые слова: профориентация, личностно-ориентированное обучение, дифференциальное обучение, множественный интеллект, ранняя диагностика, нейропластичность, наставничество, коэффициент эффективности.

Annotatsiya

Ushbu maqolada zamonaviy ta'lim tizimidagi “konveyer” usuli, kasbga yo'naltirishning kech boshlanishi va o‘quvchilarning individual qobiliyatlari inobatga olinmasligi kabi muammolarni bartaraf etishga qaratilgan “3D Differensial ta’lim modeli” (Diagnostika – Differensiasiya – Destination) taklif etilgan. Model Gardnerning ko‘p qirrali intellekt nazariyasi, Hollandning kasbiy shaxsiyat testi, shuningdek “Erkin tanlov xonasi” va “Loyiha testi” metodikalariga asoslangan. Shuningdek, miya plastikligi va neyrobiologik asoslar (E.G‘oziyev qarashlari) hamda Finlyandiya, Estoniya, Singapur tajribalari tahlil qilingan. Taklif etilgan model 3–12 yoshdagi bolalarning qobiliyatlarini erta aniqlash va differensial o‘quv dasturi asosida kasbiy yo‘naltirish imkonini beradi.

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Samaradorlikni baholash uchun ERTK formulasi hamda motivatsiya, amaliy ko‘nikmalar va moslashuvchanlik koeffitsiyentlari ishlab chiqilgan.

Kalit so‘zlar: kasbiy yo‘naltirish, shaxsga yo‘naltirilgan ta’lim, differensial ta’lim, ko‘p qirrali intellekt, erta diagnostika, neyroplastiklik, mentorlik, samaradorlik koeffitsiyenti.

INTRODUCTION

In today’s rapidly changing world, the “shelf life” of knowledge is steadily decreasing. Existing challenges within the education system of Uzbekistan—such as the “conveyor” approach, delayed career choice (grades 9–11), lack of practical training, psychological pressure from parents, and the absence of systematic ability monitoring—hinder the full realization of students’ intellectual potential.

Neurobiological research indicates that brain plasticity reaches its peak between the ages of 2 and 7, and gradually declines thereafter. By the age of 10, neural connections (synapses) are formed at their maximum level, while by the age of 15, the brain eliminates unused connections through the process of synaptic pruning. Therefore, delaying career guidance results in missed opportunities.

The aim of this study is to develop pedagogical and psychological mechanisms for career guidance based on children’s individual psychological characteristics and abilities, and to propose a “3D Differential Education” model.

METHODS

Research Design. This methodological guide is based on a theoretical and practical study and includes the following stages:

1. analysis of existing problems;
2. examination of international experience;
3. selection and adaptation of diagnostic tools;
4. development of a differential curriculum;
5. establishment of effectiveness criteria.

Sample Basis. The study covers children aged 3–12 (preschool learners and students of general secondary education schools), as well as teachers, school psychologists, and parents.

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Diagnostic Tools:

1. Howard Gardner's *Multiple Intelligences Test* – assessment based on 8 types of intelligence using a 5-point scale (linguistic, logical-mathematical, visual-spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, naturalistic).
2. John L. Holland's *Vocational Personality Test* – adapted for children aged 7–12, identifying 6 vocational types (realistic, investigative, artistic, social, enterprising, conventional).
3. *"Free Choice" Room* – observation of the child's *flow state* and level of concentration across 5 zones (natural sciences, technology, arts, socio-pedagogical, space).
4. *Projective Test* – identification of the child's systemic thinking style through problem-based situations.

Differential Education Model:

The proposed *"3D Model"* consists of the following stages:

- **Diagnostics (ages 3–5):** natural observation, interest matrix, and "drive interview" with parents.
- **Differentiation (ages 6–8):** flexible micro-groups and profile-based hours (4–6 hours per week).
- **Destination (ages 9–12):** mentoring, competency portfolio, and project defense.

Distribution of Instructional Time:

- 50% – core subjects
- 35% – specialized (profile) subjects
- 15% – practical projects

Effectiveness Assessment:

The ERTK formula is proposed for evaluating effectiveness:

K = (T_real × M_fit) / (T_total × S_stress)

where:

- TrealT_{real}Treal – time spent on ability-matched activities (weekly hours)
- MfitM_{fit}Mfit – degree of alignment with the chosen direction (1–10 points)

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- TtotalT_{total}Ttotal – total study time
- SstressS_{stress}Sstress – stress level (1–10 points)

Additional Indicators:

- MC (Motivation Coefficient)
- API (Applied Skills Index)
- AI (Adaptability Index)

RESULTS

Based on the eight types of intelligence identified in Howard Gardner's framework, each child is assessed through an "intellectual profile" presented in the form of a radar chart. The John L. Holland test determines dominant and auxiliary personality types across six categories. In the "Free Choice" room, the child's initial reaction, duration of concentration, and level of creativity are systematically recorded.

Differential Curriculum. Profile subjects and practical projects have been developed across six main areas:

1. Medicine: fundamentals of anatomy, bioethics, first aid – "Treating a Sick Doll".
2. Information Technology (IT): algorithms, Python Kids, 3D modeling – "My First Program".
3. Pedagogy: public speaking, leadership, child psychology – "Assistant Teacher".
4. Astronomy: astrophysics, rocket modeling, aerodynamics – "Start!" (rocket launch).
5. Psychology: emotional intelligence, conflictology – "Ambassador of Peace".
6. Telecommunications: signal theory, radiophysics – "Wireless Communication" (radio circuit).

Effectiveness Coefficient. In the traditional system, the coefficient KKK typically ranges from 0.4 to 0.6, whereas the proposed model aims to achieve K>1.5K > 1.5K>1.5. For example: Treal=25T_{real} = 25Treal=25 hours, Mfit=9M_{fit} = 9Mfit=9 points, Ttotal=30T_{total} = 30Ttotal=30 hours, Sstress=3S_{stress} = 3Sstress=3 points → K=2.5K = 2.5K=2.5.

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International experience demonstrates that systems such as Early Childhood Education and Care (ECEC) in Finland, early implementation of STEAM and robotics education in Estonia, and the "Every Child is Unique" strategy in Singapore have proven effective. In these countries, the rate of graduates employed in their chosen professions is high, while unemployment remains relatively low.

DISCUSSION

From a neurobiological perspective, as emphasized by E. G'oziyev, each ability has a specific sensitive period for its optimal development. For instance, language acquisition is easier in early childhood, whereas logical thinking develops more intensively during adolescence. If this period is missed, development slows down or becomes more difficult. According to the "use it or lose it" principle, the earlier a 5-year-old child's interest in mathematics is supported, the stronger the corresponding neural networks become. Delayed guidance, in contrast, leads to the decline of potential abilities.

The study also analyzes its alignment with the theories of Carol Dweck and Angela Duckworth. According to Carol Dweck's growth mindset theory, abilities can be developed through effort and practice. In the proposed model, this mindset is cultivated through mentoring at the "Destination" stage. Angela Duckworth's concept of grit—defined as passion and perseverance toward long-term goals despite challenges—is one of the core principles of the model.

This research serves as a theoretical and practical guide, and the results of pilot projects have not yet undergone statistical analysis. Future objectives include implementing the model in pilot schools and experimentally validating the results, providing empirical substantiation of the ERTK formula, standardizing innovative methods for identifying "hidden abilities," and aligning the model with future professions anticipated for 2030–2040.

CONCLUSION

The "Foundation of the Future" model represents a strategy for managing the intellectual potential of the nation.

1. Talent as a national asset: identifying and nurturing it is a task of state importance.

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2. Time as a non-renewable resource: waiting until the age of 15 results in missed opportunities.
3. Freedom as the key to success**:** rather than imposing a profession on a child, it is essential to create an environment in which their abilities can flourish.

Implementation Stages:
1. Pilot projects (preschool + school);
2. Retraining programs for educators;
3. Transition of the national education system to a differential model.

Every child is born with the potential to become a "genius" in their own field. The task is to remove the "conveyor-like" barriers in their path and help them move toward their own star.

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