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Creative thinking and psychological adjustment in students of technical higher education institution

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Abstract: In this article, technical education is essential for fostering innovation and problem-solving abilities among students. However, students in technical higher education institutions often face psychological challenges, including stress, anxiety, and social isolation, which can hinder their academic and personal growth. This paper explores the role of creative thinking in technical education, emphasizing its significance in developing innovative solutions and critical decision-making skills. Additionally, it examines the psychological adjustment challenges faced by technical students, such as workload pressure, impostor syndrome, and burnout. The paper also proposes strategies for enhancing both creative thinking and psychological adjustment, including integrating creativity into the curriculum, providing mental health support, promoting work-life balance, and fostering a growth mindset. By implementing these strategies, technical institutions can create an environment that supports students' well-being and professional success, equipping them with the skills needed to thrive in their careers.

Key words: Creative thinking, critical thinking, psychological adjustment, motivation, supportive faculty, education.

Introduction.

In the modern world, technical education plays a crucial role in shaping innovative minds and fostering problem-solving abilities. However, students in technical higher education institutions often face psychological challenges due to rigorous academic requirements, complex technical concepts, and high expectations. This article explores the importance of creative thinking and psychological adjustment among students in technical universities and suggests ways to enhance these aspects. Educational institutions, across all levels and forms, serve as social and pedagogical entities dedicated to shaping individuals' multifaceted personalities and preparing them for future life in a manner aligned with structured outcomes, thus enabling them to become productive and balanced citizens. Consequently, these institutions have placed significant emphasis on the psychological well-being of learners, considering it as essential as their pedagogical, educational, and social development. Psychological well-being fosters mental and emotional comfort, which in turn facilitates effective learning and teaching processes. Psychological adjustment is a crucial variable in education, enabling individuals to adapt to external circumstances. It represents the culmination of an individual's interaction with their environment and forms an integral part of the overall adjustment of students, helping them feel satisfied with their presence in school and within the educational community. It also enables them to establish positive relationships and interact effectively with peers, teachers, and administrative staff, while successfully grasping academic subjects and achieving educational success. Conversely, students experiencing poor adjustment often face dissatisfaction, emotional conflicts, and unmet psychological needs. Motivation, on the other hand, is one of the key factors directing learners' behaviors toward achieving

The role of creative thinking in technical education

Creative thinking is the ability to generate new and original ideas, which is essential in technical disciplines such as engineering, information technology, and applied sciences. It enables students to:

- Develop innovative solutions to complex problems.

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- Enhance adaptability in rapidly evolving technological fields.
- Improve critical thinking and decision-making skills.
- Foster teamwork and collaboration through brainstorming and ideation.

Encouraging creativity in technical education requires integrating interdisciplinary approaches, providing hands-on learning experiences, and allowing students to experiment with different problem-solving methods. Furthermore, technical education institutions can nurture creative thinking through:

- **Problem-based learning (PBL):** Engaging students in real-world challenges where they must analyze, design, and implement solutions, fostering creativity and independent thinking.
- **Innovation labs and makerspaces:** Providing access to advanced tools and technologies that allow students to experiment, prototype, and refine their ideas.
- **Encouraging divergent thinking:** Promoting multiple solutions to a single problem and enabling students to explore unconventional methods.
- **Collaboration with industry:** Establishing partnerships with industries to expose students to real-time technical problems and innovative project development.
- **Cross-disciplinary learning:** Encouraging students to combine knowledge from different fields, such as engineering and business, to create holistic solutions.
- **Incorporating creative exercises:** Using brainstorming sessions, design sprints, and case studies to stimulate innovative thinking among students.

By fostering a culture of creativity, technical education institutions can produce graduates who are not only proficient in their fields but also capable of developing groundbreaking innovations that drive technological advancement.

Psychological adjustment challenges faced by technical students

Psychological adjustment refers to an individual's ability to cope with academic and social demands while maintaining emotional well-being. Technical students often encounter stress, anxiety, and burnout due to:

- Heavy academic workload and frequent assessments.
- High competition and pressure to excel.
- Limited time for relaxation and social activities.
- Uncertainty about future career prospects.

Additionally, technical students may face:

- **Difficulty in managing time and responsibilities:** Balancing coursework, projects, and internships can lead to overwhelming stress and time constraints.
- **Social isolation:** Many technical students spend extended hours studying or working on projects, which may result in a lack of social interaction and support.
- **Impostor syndrome:** The highly competitive nature of technical education can make students feel inadequate or unworthy of their achievements, leading to low self-esteem and increased anxiety.
- **Lack of soft skills development:** While technical skills are emphasized, students may struggle with communication, teamwork, and emotional intelligence, affecting their psychological well-being and employability.
- **Financial and career-related stress:** The pressure to secure well-paying jobs or internships and manage educational expenses can significantly impact students' mental health.
- **Burnout and fatigue:** Prolonged exposure to technical problem-solving without sufficient breaks can result in mental exhaustion, decreased motivation, and cognitive overload.

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These challenges can negatively impact students' mental health, leading to decreased motivation, lower academic performance, and emotional distress. Addressing these issues through effective support systems and self-care strategies is crucial for ensuring students' well-being and success.

Strategies for enhancing psychological adjustment and creative thinking

To ensure a balanced academic journey, technical universities should implement strategies that support both psychological well-being and creative development. Some effective approaches include:

Integrating creativity into the curriculum: Encouraging project-based learning and real-world problem-solving. Providing opportunities for interdisciplinary research and collaboration. Incorporating design thinking and innovation workshops. Encouraging students to engage in open-ended projects that require creative solutions. Introducing artistic and creative electives alongside technical courses to foster divergent thinking.

Providing psychological support services: Establishing counseling centers and mental health support programs. Organizing stress management and mindfulness sessions. Encouraging peer support groups and mentorship programs. Implementing regular check-ins with faculty members to monitor student well-being. Providing workshops on emotional intelligence, self-care, and resilience training.

Promoting work-life balance: Encouraging extracurricular activities, including sports and cultural events. Implementing flexible learning schedules and workload management strategies. Teaching time management and self-care techniques. Encouraging students to take breaks and practice relaxation techniques like meditation or exercise. Promoting awareness campaigns on the importance of mental health and well-being.

Enhancing student engagement and motivation: Recognizing and rewarding creative achievements. Encouraging participation in hackathons, competitions, and research conferences. Fostering a supportive and inclusive learning environment. Creating networking events where students can interact with professionals and industry leaders to gain inspiration and motivation. Providing opportunities for student-led initiatives, allowing them to explore and develop their interests beyond academics.

Developing supportive faculty and administration: Training educators to recognize signs of psychological distress among students and provide necessary support. Encouraging faculty to adopt flexible teaching methodologies that accommodate different learning styles. Establishing feedback mechanisms to ensure that student concerns are addressed effectively. Promoting a culture of mentorship where students can seek guidance and support from faculty members.

Encouraging a growth mindset: Teaching students that intelligence and skills can be developed over time with effort and persistence. Providing opportunities for failure and learning from mistakes, rather than penalizing errors harshly. Creating an environment where students feel comfortable taking risks and thinking outside the box. Encouraging goal-setting and self-reflection as a means of personal and academic growth.

Implementing holistic learning approaches: Integrating mental health education into the curriculum to help students develop coping strategies. Encouraging peer collaboration and teamwork in projects to foster a sense of community and support. Providing access to relaxation spaces and recreational areas within campuses. Encouraging students to engage in personal development activities, such as journaling, creative writing, or visual arts.

By incorporating these strategies, technical higher education institutions can create an environment that supports both creative thinking and psychological well-being, ensuring that students thrive both academically and personally. Creative thinking and psychological adjustment are vital for students in technical higher education institutions. By fostering innovation and providing mental health support, universities can ensure that students thrive

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both academically and personally. A holistic approach that integrates creativity, psychological well-being, and academic excellence will prepare students to become resilient, forward-thinking professionals in their respective fields.

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