

# Inovasi Kurikulum

https://ejournal.upi.edu/index.php/JIK





# Psychological factors and customized learning pathways in curriculum design

Habibat Bolanle Abdulkareem<sup>1</sup>, Kamoru Abidoye Tiamiyu<sup>2</sup>, Aldulkareem Olalekan Abubakar<sup>3</sup>, Rukayat Adetoun Abdulkareem4. Fadilat Oluwakemi Adegbenro5

1,2,3,4,5 Al-Hikmah University, Ilorin, Nigeria abdulkareemhabibat001@gmail.com1

#### **ABSTRACT**

This study explores the prevalence of mental health and learning pathways among undergraduate students in Kwara State, Nigeria. It examines the relationship between personality traits, learning pathways, and mental health behavior. Analyzing data from 1,502 respondents, the study categorizes mental health behavior into low, moderate, and high levels. Results indicate that most students (55.9 percent) exhibit low mental well-being, while 32.7 percent show moderate and 11.5 percent demonstrate high mental well-being. Regression analysis reveals that personality traits, including agreeableness, conscientiousness, neuroticism, openness to experience, and extraversion, collectively account for 51.2 percent of the variance in mental health scores. Among these traits, only conscientiousness significantly contributes, while other traits like neuroticism and agreeableness do not significantly impact mental health. These findings contrast with previous studies that reported higher levels of psychological distress and varying influences of personality traits on mental health. Recommendations include incorporating comprehensive mental health assessments into curricula, providing tailored mental health support, and integrating mental health resources within the educational framework. The study underscores the need for targeted interventions and support to address the high prevalence of low mental well-being among university undergraduates in the region.

#### **ARTICLE INFO**

#### Article History:

Received: 20 May 2024 Revised: 7 Sep 2024 Accepted: 15 Sep 2024 Available online: 28 Sep 2024

Publish: 29 Nov 2024

# Kevword:

curriculum design; customized learning; mental health; undergraduates students

Open access ©

Inovasi Kurikulum is a peer-reviewed open-access journal.

### **ABSTRAK**

Penelitian ini mengeksplorasi prevalensi kesehatan mental dan jalur belajar di kalangan mahasiswa sarjana di Negara Bagian Kwara, Nigeria, dan meneliti hubungan antara sifat-sifat kepribadian, jalur belajar, dan perilaku kesehatan mental. Menganalisis data dari 1.502 responden, penelitian ini mengkategorikan perilaku kesehatan mental ke dalam tingkat rendah, sedang, dan tinggi. Hasil penelitian menunjukkan bahwa sebagian besar siswa (55,9 persen) menunjukkan kesehatan mental yang rendah, sementara 32,7 persen menunjukkan kesehatan mental yang sedang, dan 11,5 persen menunjukkan kesehatan mental yang tinggi. Analisis regresi mengungkapkan bahwa sifat-sifat kepribadian, termasuk kesetujuan, ketelitian, neurotisme, keterbukaan terhadap pengalaman, dan ekstraversi, secara kolektif menyumbang 51,2 persen dari varians dalam skor kesehatan mental. Di antara sifat-sifat ini, hanya conscientiousness yang menunjukkan kontribusi yang signifikan, sementara sifat-sifat lain seperti neuroticism dan agreeableness tidak secara signifikan mempengaruhi kesehatan mental. Temuan ini berbeda dengan penelitian sebelumnya yang melaporkan tingkat tekanan psikologis yang lebih tinggi dan berbagai pengaruh dari sifat-sifat kepribadian terhadap kesehatan mental. Rekomendasi yang diberikan termasuk memasukkan penilaian kesehatan mental yang komprehensif ke dalam kurikulum, menyediakan dukungan kesehatan mental yang disesuaikan, dan mengintegrasikan sumber daya kesehatan mental dalam kerangka kerja pendidikan. Studi ini menggarisbawahi perlunya intervensi dan dukungan yang ditargetkan untuk mengatasi tingginya prevalensi kesejahteraan mental yang rendah di kalangan mahasiswa di wilayah ini.

Kata Kunci: desain kurikulum; kesehatan mental; penyesuaian pembelajaran; mahasiswa

### How to cite (APA 7)

Abdulkareem, H. B., Tiamiyu, K. A., Abubakar, A. O., Abdulkareem, R. A., & Adegbenro, F. O. (2024). Psychological factors and customized learning pathways in curriculum design. Inovasi Kurikulum, 21(3), 1887-1908.

This article has been peer-reviewed through the journal's standard double-blind peer review, where both the reviewers and authors are anonymised during review.

Copyright © 0 0

2024, Habibat Bolanle Abdulkareem, Kamoru Abidoye Tiamiyu, Aldulkareem Olalekan Abubakar, Rukayat Adetoun Abdulkareem, Fadilat Oluwakemi Adegbenro. This an open-access is article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) https://creativecommons.org/licenses/by-sa/4.0/, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author, and source are credited. \*Corresponding author: abdulkareemhabibat001@gmail.com

# INTRODUCTION

The integration of psychological factors and customized learning pathways in curriculum design aims to create educational experiences that are more engaging, effective, and tailored to individual student needs (Tapalova & Zhiyenbayeva, 2022). The design of customized learning pathways in curriculum development involves several psychological factors that enhance student engagement and learning outcomes. The study of personality fits under the larger category of psychology that views humans as unique, complex entities. In recent years, the importance of individualized education has gained traction, emphasizing the need for customized learning pathways that cater to the unique psychological profiles of students. This approach recognizes the correlation between personality, mental health, and learning outcomes, advocating for a curriculum design that addresses these factors to enhance educational experiences and success.

The psychological factors that influence curriculum design and the correlation between personality and mental health include Behavioral learning theories that focus on how changes in observable behavior can guide curriculum content and instructional methods (Syomwene et al., 2013). Concepts like reinforcement, conditioning, and operant learning are applied. Cognitive and developmental theories emphasize how mental processes like perception, memory, and problem-solving shape what and how students learn (Piaget, 1964). The curriculum is designed to match cognitive development stages. Humanistic theories highlight the importance of student motivation, self-actualization, and personal growth, as Rogers describes in a book titled "Freedom to Learn for the 80's". The curriculum provides experiences to foster these humanistic outcomes.

Personality traits like neuroticism, extraversion, and conscientiousness are linked to mental health outcomes. Neurotic individuals are more prone to anxiety and depression, while extroverts tend to have better emotional well-being (Caspi et al., 2005). A curriculum designed with an understanding of student personalities can provide customized learning pathways to support mental health, as described by Ornstein and Hunkins in a book titled "Curriculum: Foundations, Principles, and Issues". For example, they offer mindfulness exercises for neurotic students or group projects for introverted learners. Addressing both academic and socio-emotional needs through the curriculum is essential, as mental health issues can significantly impact a student's ability to learn and succeed. In curriculum design, psychological factors like learning theories and personality traits should be carefully considered to create customized learning pathways that support students' academic progress, mental health, and overall well-being (Syomwene et al., 2013).

Personality characteristics profoundly influence various aspects of individuals' lives, including learning, employment, relationships, and health. Personality shapes individuals' worldviews and explains why people behave differently in similar circumstances (Adebayo, 2022). Personality comprises unique traits that govern behavior, character, and nature, influenced by hereditary and environmental factors (Abdulkareem et al., 2023; Umegaki & Higuchi, 2022). Personality processes evolve gradually and involve instrumental and reactive components that mediate how traits manifest over time (Umegaki & Higuchi, 2022). Research highlights the comprehensive nature of personality, encompassing physical, emotional, psychological, spiritual, and social dimensions (Bademci et al., 2018; Paliwal & Telesra, 2019). These characteristics are shaped by genetic inheritance and environmental influences across prenatal, perinatal, and postnatal periods (Abdulkareem et al., 2023; Riyanto et al., 2022). Personality traits influence emotional and cognitive experiences, impacting behavior and individual differences (Schwaba et al., 2019). Environmental factors during pregnancy, such as maternal health and substance use, can significantly influence the development of a child's personality (Adeoye et al., 2023). Diseases, nutrition, accidents, and peer pressure further shape personality traits (Kasmana et al., 2021). Understanding these

influences is crucial for comprehending educational outcomes and overall well-being, as personality traits are integral to academic achievement and life satisfaction (Abdulkareem et al., 2023).

In summary, personality is a complex interplay of inherited traits and environmental influences that profoundly impact various aspects of human life, from cognitive processing and emotional responses to behavioral consistency and life outcomes (Alexandra & Monk, 2020; Van den Bergh et al., 2020); Personality plays a crucial role in shaping an individual's learning style, influencing how they engage with and process information. According to research, personality traits such as extraversion or introversion can impact preferences for learning environments and interaction styles. For example, extroverts may thrive in group settings, whereas introverts prefer solitary study environments (Arik, 2019).

Moreover, cognitive preferences, as described by models like the Myers-Briggs Type Indicator (MBTI), further illustrate how personality influences learning approaches. Individuals with a preference for sensing (S) tend to focus on concrete details, whereas those leaning towards intuition (N) may prefer abstract concepts (Adeoye et al., 2023). This difference can influence how learners process and understand new information. Motivation and goal orientation are also influenced by personality traits such as conscientiousness, which impacts the effort and persistence individuals put into their learning tasks. Additionally, openness to experience can affect how willing individuals are to explore new ideas and learning methods, as described by Costa and McCrae in a book titled "Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI)".

By considering these factors, educators and learners can better tailor learning environments and strategies to accommodate diverse personality traits, enhancing learning outcomes and engagement. Understanding these dynamics helps create more effective educational experiences that cater to individual preferences and needs (Buzduga, 2018). Personality traits such as neuroticism, extraversion, and conscientiousness influence individuals' attitudes toward learning (Obeten, 2021). These traits shape how students approach their studies and affect their emotional and cognitive responses to academic challenges (Abdulkareem et al., 2023). The environment and upbringing significantly influence personality development, influencing students' study habits and attitudes (Abdulkareem et al., 2023). For instance, students may inherit behavioral tendencies from their parents or be influenced by their social surroundings, impacting their approach to learning (Obeten, 2021).

Mental health plays a crucial role in shaping these dynamics, affecting students' emotional well-being, cognitive functions, and overall ability to engage effectively in academic tasks (Kang et al., 2021). Issues such as anxiety, depression, or stress can hinder learning by impairing concentration and motivation (Abdulkareem & Lasis, 2024). Conversely, positive mental health supports a healthy attitude toward learning, enhancing students' resilience and ability to cope with academic pressures (Bhandari, 2020). Understanding the interplay between personality traits and mental health is essential for supporting students' academic success and well-being. Educators and policymakers can utilize this knowledge to implement effective strategies that promote positive learning environments and support students' mental health needs (Bleidorn et al., 2021).

Mental health significantly influences a person's learning style through various mechanisms. Conditions such as anxiety, depression, or attention disorders can impair cognitive functions crucial to learning, such as attention, memory, and executive functioning. These challenges directly shape how individuals process and retain information, affecting their preferred learning styles. Mental health issues can impact motivation and engagement in learning activities. For instance, individuals with depression may struggle with low motivation, while those with anxiety may find it difficult to concentrate or participate actively in educational settings (Dooshima, 2018).

Psychological factors and customized learning pathways in curriculum design

Mental health conditions also influence learning preferences. Those with ADHD, for example, may benefit from interactive or kinesthetic learning methods to enhance focus and retention. Conversely, individuals experiencing anxiety might prefer quieter, less stimulating environments to facilitate learning. Emotional regulation plays a crucial role in learning as well. Mood swings, stress, or emotional instability can disrupt attention and hinder the effective handling of academic challenges (Arpentieva et al., 2022).

Furthermore, mental health impacts social interactions and is integral to collaborative learning. Social anxiety or difficulties in interpersonal relationships can affect participation in group work or discussions. Positive mental health supports a healthy self-concept and confidence, crucial for embracing learning challenges and persisting through setbacks (Abdulkareem et al., 2023). Understanding these dynamics underscores the importance of holistic support systems in educational environments, integrating mental health considerations to optimize learning outcomes for all individuals.

The educational landscape increasingly recognizes the need for personalized learning experiences to cater to students' diverse psychological profiles. In recent years, integrating psychological factors into curriculum design, mainly through developing customized learning pathways, has garnered significant attention. Various studies have explored how psychological aspects like motivation, self-efficacy, and cognitive load impact learning and how these can be leveraged to create more effective and personalized educational experiences.

One research study said motivation is a central psychological factor influencing student engagement and learning outcomes. Deci and Ryan's Self-Determination Theory (SDT), explained in a book titled "Intrinsic Motivation and Self-Determination in Human Behavior" emphasizes the importance of intrinsic motivation, fostered when learners experience autonomy, competence, and relatedness. Their work highlights how these needs must be satisfied to enhance intrinsic motivation and learning effectiveness. Complementing this is the Achievement Goal Theory, which differentiates between mastery and performance goals. Mastery goals, focused on self-improvement and learning, are generally associated with better educational outcomes than performance goals, which are concerned with outperforming others (Dweck & Leggett, 1988).

Another critical psychological factor is self-efficacy, the belief in one's ability to succeed in specific situations. In a book titled "Self-Efficacy: The Exercise of Control" Bandura demonstrated that self-efficacy influences students' task approaches and high self-efficacy is linked to more remarkable persistence and academic success. This concept is integral to understanding how students engage with learning tasks and persevere through challenges. Additionally, Cognitive Load Theory directs the design of learning materials and should consider the cognitive capacity of learners (Sweller, 1988). Overloading this capacity can impede learning, making it essential to structure educational content in ways that manage cognitive load effectively, avoiding unnecessary complexity that could overwhelm students.

Meanwhile, the concept of customized learning pathways has evolved from research showing the benefits of personalized instruction. Two Sigma Problem found that students receiving one-on-one instruction performed significantly better than those in traditional classroom settings (Bloom, 1984). This finding laid the foundation for personalized learning, which aims to replicate the effectiveness of individualized instruction through customized learning pathways. Adaptive learning technologies have also played a pivotal role in personalizing education. A meta-analysis revealed that computer-based adaptive learning systems significantly enhance learning outcomes by tailoring content difficulty based on the learner's performance (Kulik & Kulik, 1991). The impact of intelligent tutoring systems, which adapt content delivery and pacing to meet individual student needs, improves learning efficiency and retention (Aleven et al., 2006).

Competency-Based Education (CBE) represents another approach to customization in learning. The U.S. Department of Education, in a book titled "Competency-Based Pathways" highlighted that CBE allows students to progress at their own pace once they have demonstrated mastery of specific skills. This method has been shown to increase student engagement and satisfaction by accommodating personalized progression, making it a promising strategy in education. Blended learning models offer a practical integration of psychological factors with customized pathways. In a book titled "The Rise of K-12 Blended Learning" Horn and Staker argued that blended learning, combining online and face-to-face instruction, can be tailored to meet diverse learning styles and needs. By leveraging technology, blended learning environments can create flexible and personalized educational experiences, addressing individual differences among students.

The role of mindset in learning pathways has also been emphasized. Students with a growth mindset who believe their abilities can improve with effort are likelier to engage successfully with customized learning pathways (Yeager & Dweck, 2012). These students tend to show greater resilience and adaptability, which are crucial for benefiting from personalized education. While the benefits of customized learning pathways are clear, there are challenges to consider. Equity in access remains a significant issue, as students from different socioeconomic backgrounds may not have equal access to the technology and resources required for personalized learning, as described by the U.S. Department of Education in a book titled "Competency-Based Pathways". Additionally, the role of teachers in facilitating customized learning pathways cannot be overlooked. Research indicates that teachers are essential in guiding students, providing feedback, and ensuring that learning pathways align with educational standards, as described by Horn and Staker in a book titled "The Rise of K-12 Blended Learning".

Integrating psychological factors into customized learning pathways offers a promising approach to curriculum design. Educators can create more effective and personalized learning environments that enhance student outcomes by considering individual motivation, self-efficacy, and cognitive load differences. This study explores how psychological factors such as personality traits and mental health can inform the design of customized learning pathways and subsequently impact educational outcomes. By understanding these psychological factors, educators can tailor curricula to enhance student engagement, motivation, and academic performance.

The primary purpose of this study is to find out the prevalence of mental health among undergraduates based on personality traits and how the curriculum in higher education can be adapted to suit students' personalities and psychological conditions. The specific objectives are to 1) Investigate the prevalence of mental health behavior among undergraduates in Kwara State and 2) assess the relationship between undergraduates' students' personality traits (agreeableness, conscientiousness, openness, extraversion, and neuroticism) and mental behavior. The hypothesis in this research is "There is no significant relationship between personality traits (agreeableness, conscientiousness, openness, extraversion, and neuroticism) and mental health behavior among public University undergraduates in Kwara State Nigeria."

# LITERATURE REVIEW

This study is premised on Gardner's Theory of Multiple Intelligences by Piaget in a book titled "Frames of Mind: The Theory of Multiple Intelligences, Piaget's Stages of Cognitive Development, "and Vygotsky's "Social Development Theory," which provided foundational insights into how students learn differently. These theories emphasize the importance of recognizing individual differences in cognitive and emotional development, which can significantly impact student learning outcomes (Abdulkareem & Lasis, 2024).

# The Correlation between Personality and Learning Preferences

The relationship between personality and learning preferences is well-studied in educational psychology. Personality traits can significantly influence how individuals learn and process information. Costa and McCrae, in a book titled Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI), describe that personality traits are often assessed using models like the Big Five Personality Traits including:

- 1. Openness to Experience: Creativity, curiosity, and willingness to try new things
- 2. Conscientiousness: Organization, dependability, and discipline of things
- 3. Extraversion: Sociability, assertiveness, and talkativeness things
- 4. Agreeableness: Compassion, cooperativeness, and trust in things
- 5. Neuroticism: Tendency toward emotional instability and negative emotions things

Studies have shown that individuals with high openness are more likely to engage in deep learning and enjoy intellectual challenges, as described by Chamorro-Premuzic and Furnham in a book titled "Personality and Intellectual Competence". Conscientious individuals are typically more consistent in their study habits and prefer organized learning environments (Komarraju & Karau, 2005). Extraverts are likelier to participate in discussions and prefer interactive learning (Entwistle & McCune, 2004). Agreeable individuals often prefer group learning and collaborative tasks (Komarraju et al., 2011). Those with high levels of neuroticism might avoid high-pressure learning situations and prefer clear guidance and support (Komarraju et al., 2011). Study habits of adult education students and personality factors revealed that their agreeableness, conscientiousness, extroversion, and openness to experience were high, while their neuroticism was low (Abdulkareem et al., 2023).

Research has shown that students with high self-efficacy tend to perform better and experience less stress in adapted learning environments (Zimmerman, 2000). Conversely, high levels of anxiety can impair learning and negatively impact mental health (Hembree, 1988). Motivation plays a dual role; intrinsic motivation generally promotes better mental health, while extrinsic motivation needs careful balance to avoid stress (Vansteenkiste et al., 2006). Resilient students are more likely to succeed in adapted learning contexts, handling setbacks effectively (Martin & Marsh, 2008). The assessment of the prevalence of psychological distress, associated lifestyle behaviors, and associated coping strategies among the students of the healthcare profession (Mishra et al., 2023).

The relationships among stress, mental health, and academic classification in a national sample of college students (Moore et al., 2019). The researchers utilized secondary data from 27 387 college students responding to the fall 2009 American College Health Association-National College Health Assessment. The result indicated that undergraduates reported significantly higher rates of feelings and behaviors related to poor mental health and adverse effects on academic performance than graduate students. Graduate and undergraduate students reported significantly different levels and sought mental health care services in the future than undergraduates (64.8%),  $\chi$  (1) = 101.12, Cramer's V = .061, p = .001. Stress and mental health differences exist between undergraduate and graduate students (Bai et al., 2020).

A moderated mediation model was built to examine the relationships among CT, CERS, neuroticism, and current depression using the SPSS process 3.5 macros. The results revealed that the significant mediating effects of adaptive CERS ( $\beta$  = 0.012) and maladaptive CERS ( $\beta$  = 0.028) between CT and depression were observed (Chu et al., 2022). The impact of mindfulness training on neuroticism and psychological distress over six years in a sample of Norwegian medicine and clinical psychology students who either received the standard MBSR training or a modified version (Hanley et al., 2019). The results indicated that mindfulness training can have a long-lasting influence on neuroticism and that mindfulness-based therapies may successfully lessen clinical symptoms associated with neuroticism. Neuroticism has a

positive predictive influence on the level of depression, as seen by the positive correlation between neuroticism and depression severity (Premkumar et al., 2018).

Understanding personality traits and learning styles can provide significant insights into how individuals interact with the world and acquire new knowledge. Personality traits include openness to experience, imagination, curiosity, open-mindedness, and a willingness to try new things. For instance, someone highly open might enjoy exploring new ideas, engaging in creative pursuits, and seeking diverse experiences. Conscientiousness, being organized, responsible, disciplined, and goal-oriented. A conscientious individual might prefer planned activities, meet deadlines consistently, and pay great attention to detail (Abdulkareem et al., 2023). Extraversion involves being sociable, outgoing, energetic, and enjoying being around others (Zimmermann & Roberts, 2019). Extraverted individuals often feel energized by social interactions, enjoy group activities, and tend to be assertive. Agreeableness is characterized by being cooperative, compassionate, trusting, and good-natured. People high in agreeableness value harmony, are willing to compromise, and are considerate of other's feelings (Abdulkareem et al., 2023). Neuroticism, described, involves emotional instability, anxiety, and moodiness. Individuals high in neuroticism may experience stress easily, worry frequently, and have intense emotional reactions (Roberts, 2018).

As outlined by various researchers, learning styles also play a crucial role in how individuals process information. Partnership for 21st Century Learning, in a report titled "Framework for 21st Century Learning Definitions" describes visual learners as those who prefer to see and visualize information, using diagrams, charts, videos, and written notes to understand concepts. Auditory learners, as noted by Fleming in a book titled "Teaching and Learning Styles", prefer to hear and discuss information. They benefit from lectures, discussions, audio recordings, and verbal instructions. Kinesthetic learners prefer hands-on experiences and physical activities. They learn best through activities like experiments, role-playing, and real-life examples (Oz, 2014).

Reading/writing learners prefer to read and write information. They use lists, essays, reading assignments, and written explanations to grasp concepts. Social learners, identified by Gardner in a book titled "Frames of Mind: The Theory of Multiple Intelligences" prefer to learn with others and through social interaction. They enjoy group work, collaborative projects, and study groups. Solitary learners, highlighted by Gardner, prefer to learn alone and through self-study. They benefit from self-paced learning, personal reflection, and individual projects. Recognizing and understanding these personality traits and learning styles can help tailor educational and personal growth strategies, making learning more effective and enjoyable. It is on this basis that the researchers were of the view that students are faced with mental issues as a result of the inability to cope with school stress and other emotional disturbances and why the researchers investigated the relationship between personality traits and mental health among undergraduates of Kwara State.

On the other hand, learning preferences refer to how individuals like to learn and process information. Common frameworks for categorizing learning styles include the VARK Model: Visual, Auditory, Reading/Writing, and Kinesthetic as describe by Fleming on a book titled "Teaching and Learning Styles, Kolb's Learning Styles: Diverging, Assimilating, Converging, Accommodating" as describe by Kolb in a book titled "Experiential Learning: Experience as the Source of Learning and Development" and Gardner's "Multiple Intelligences: Linguistic, Logical-Mathematical, Spatial, Bodily-Kinesthetic, Musical, Interpersonal, Intrapersonal, Naturalistic".

The following are several learning styles based on an individual's personality (Komarraju et al., 2011).

1. Openness to Experience: Openness to experience positively correlates with a preference for diverse and novel learning experiences. Individuals high in openness may prefer abstract and theoretical learning, such as reading and exploring new ideas.

Psychological factors and customized learning pathways in curriculum design

- 2. Conscientiousness: This is often linked with structured and organized learning environments. These individuals may prefer detailed planning and systematic learning methods, such as note-taking and step-by-step instructions.
- 3. Extraversion: Tends to be associated with social and interactive learning. Extraverts may thrive in group discussions, collaborative projects, and hands-on activities.
- 4. Agreeableness: Positively correlated with cooperative and collaborative learning. These individuals often prefer group work and activities that involve helping others.
- 5. Neuroticism: may influence a preference for less stressful and more supportive learning environments. High neuroticism could lead to a preference for structured and predictable learning to reduce anxiety.

Understanding the correlation between personality and learning preferences can help educators tailor their teaching methods to suit the needs of their students better. For instance, they provided various learning activities to cater to different personality types, as described by Gardner in a book titled "Frames of Mind: The Theory of Multiple Intelligences". They offered individual and group learning opportunities, as Kolb described in a book titled "Experiential Learning: Experience as the Source of Learning and Development". They created a supportive learning environment for students with high neuroticism (Komarraju et al., 2011). It encouraged open-mindedness and creativity in highly open students. By considering these correlations, educators can enhance the effectiveness of their teaching strategies and improve student engagement and learning outcomes.

# Psychological Factors that Affecting Students' Mental Health in Adapted Learning Contexts

Adapted learning contexts, which tailor educational experiences to meet individual students' needs, can significantly influence students' mental health. Several psychological factors play a role in how students adapt to these environments.

- 1. Self-efficacy: Self-efficacy, or a student's belief in their ability to succeed, is crucial in adapted learning contexts. Students with high self-efficacy are more likely to engage with the material, persist through challenges, and achieve better outcomes, as described by Bandura in a book titled "Self-efficacy: The Exercise of Control".
- 2. Stress and Anxiety: Adapted learning environments can both alleviate and exacerbate stress and anxiety. On one hand, personalized learning can reduce stress by allowing students to learn at their own pace. On the other hand, the need to constantly adapt and self-regulate can increase anxiety for some students (Schneider & Preckel, 2017).
- 3. Motivation: Intrinsic and extrinsic motivation significantly affect students' engagement with adapted learning contexts. Intrinsic motivation, driven by interest and enjoyment, enhances engagement and mental well-being. Extrinsic motivation, driven by rewards and external pressures, can sometimes lead to stress and decreased mental health if not managed properly (Deci & Ryan, 2000).
- 4. Resilience: Resilience, or the ability to bounce back from setbacks, is essential for coping with the demands of adapted learning. Students with higher resilience are better equipped to handle the challenges and uncertainties that come with personalized learning paths, as described by Masten in a book titled "Ordinary Magic: Resilience in Development".
- 5. Social Support: The level of social support from peers, teachers, and family significantly impacts students' mental health in adapted learning contexts. Strong support networks can provide emotional and practical assistance, enhancing students' well-being and academic performance (Wentzel, 1998).
- Sense of Belonging: A sense of belonging, or feeling accepted and valued in the learning environment, is critical for mental health. Adapted learning contexts that promote inclusivity and connection can improve students' sense of belonging and overall well-being (Baumeister & Leary, 1995).

- 7. Autonomy: Feeling autonomous, or having control over one's learning, can positively affect mental health. Adapted learning contexts that offer choices and foster independence can enhance students' autonomy, increase motivation, and improve mental health (Ryan & Deci, 2000).
- 8. Cognitive Load: The cognitive load, or the mental effort required to process information, can impact students' mental health. Adapted learning that effectively manages cognitive load by breaking down complex tasks into manageable parts can reduce stress and improve learning outcomes (Sweller, 1988).

Educators and policymakers can enhance students' mental health in adapted learning contexts by fostering self-efficacy through positive feedback and achievable challenges, reducing stress and anxiety with supportive resources and flexible pacing (Schneider & Preckel, 2017), encouraging intrinsic motivation through engaging and relevant content (Deci & Ryan, 2000) as well as building resilience through supportive relationships and growth mindset interventions, as describe by Masten in a book titled "Ordinary Magic: Resilience in Development". Educators also can strengthen social support networks within the learning environment (Wentzel, 1998). Creating an inclusive and welcoming atmosphere will boost students' sense of belonging (Baumeister & Leary, 1995), promoting autonomy by offering choices and encouraging self-directed learning (Ryan & Deci, 2000) and managing cognitive load with structured and scaffolded learning activities (Sweller, 1988).

# **Personalized Curriculum Design**

Creating personalized learning experiences involves integrating various approaches, technologies, and tools to meet individual needs. Tomlinson, in a book titled "How to Differentiate Instruction in Mixed-Ability Classrooms" stated that critical approaches include differentiated instruction, which tailors teaching methods to accommodate diverse abilities and interests, and competency-based learning, allowing students to progress at their own pace, described by Sturgis and Patrick in a book titled "When Success Is the Only Option: Designing Competency-Based Pathways for Next Generation Learning", and blended learning, which combines traditional and online activities for flexibility (Kern, 2018). Technologies such as Learning Management Systems (LMS) like Moodle, Canvas, and Blackboard help deliver courses and track progress, as Coates et al. described in a book titled "A Critical Examination of the Effects of Learning Management Systems on University Teaching and Learning". Adaptive learning technologies like DreamBox and Knewton adjust content difficulty based on student performance, as described by Baker & Inventado in a book titled "Educational Data Mining and Learning Analytics". At the same time, Al-driven tools offer personalized feedback and adaptive learning paths, as described by Luckin et al. in a book titled Intelligence "Unleashed: An Argument for AI in Education".

Supporting tools include educational apps like Khan Academy and Duolingo for customized learning, as described by Galloway in a book titled "The Four: The Hidden DNA of Amazon, Apple, Facebook, and Google", formative assessment tools like Kahoot! and Google Forms to gauge understanding (Wang, 2015), and interactive content tools like Nearpod for engaging lessons, as described by Herold in a book titled "Technology in Education: An Overview". However, effective personalized learning requires a mix of thoughtful approaches, advanced technology, and supportive tools to cater to individual learning needs. Educational institutions have successfully implemented personalized curricula, resulting in significant positive impacts on student outcomes. Summit Public Schools uses a personalized learning platform that allows students to set goals and track their progress, with teachers providing individualized support. This has led to improved academic performance, with Summit students often outperforming their peers in traditional settings on standardized tests, as Wong describes in a book titled "The Rise of Personalized Learning".

Psychological factors and customized learning pathways in curriculum design

Purdue University's Polytechnic Institute adopted a competency-based education model, where students advance based on mastery rather than time spent in class. This model has increased student engagement and retention rates, with students reporting greater satisfaction as they tailor their studies to their interests and career goals (Lee et al., 2018). In Rhode Island, a statewide initiative implemented personalized learning across multiple schools using technology and data to tailor instruction to individual student needs. This approach has resulted in gains in mathematics and reading, helping to close achievement gaps and support previously underperforming students (Bishop et al., 2020)

A study on higher education reveals that colleges and universities are integrating technologies such as Alpowered teaching assistants, AR/VR tools, and machine learning for adaptive learning. These technologies have created more interactive and engaging learning environments, improving learning and grades. Faculty members also recognize the potential of these tools to tailor instruction and enhance student engagement (Mishenina et al., 2023). These examples demonstrate that personalized learning, supported by appropriate technology and instructional strategies, significantly enhances student outcomes, including academic achievement, engagement, and overall satisfaction.

However, it is essential to note that the following points would also facilitate personalized instruction. Conducting assessments to understand the learner's current knowledge, skills, interests, and learning style is essential, as described by Tomlinson in a book titled "How to Differentiate Instruction in Mixed-Ability Classrooms". Identify long-term and short-term goals, both academic and personal, as described by Zhao in a book titled "World Class Learners: Educating Creative and Entrepreneurial Students". Identify Core Competencies and Standards. Ensure alignment with educational standards or competencies relevant to the learner's level and future aspirations, as described by Gagné in a book titled "Principles of Instructional Design". Consider incorporating interdisciplinary skills like critical thinking, problem-solving, and digital literacy (Olanrewaju et al., 2021).

Choose textbooks, online resources, and multimedia content that align with the learner's needs and goals, including a variety of formats (videos, articles, interactive activities) to cater to different learning styles, as described by Gardner in a book titled "Frames of Mind: The theory of Multiple Intelligences". Also, Reigeluth, in a book titled "Instructional Design Theories and Models: A New Paradigm of Instructional Theory" said that Design Flexible Learning Paths allow learners to choose the order and pace of learning topics. Incorporate project-based learning, where learners can explore subjects of interest deeply and practically (Bell, 2010). Integrate Technology and Tools by using educational technologies like learning management systems (LMS), adaptive learning platforms, and educational apps, as described by Picciano in a book titled "Blended Learning: Research Perspectives".

Means et al., in a book titled "Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies" describe that encourage the use of tools that support collaboration, creativity, and self-assessment. Create a Supportive Learning Environment by establishing a mentorship or coaching system for personalized guidance and support, as described by Darling-Hammond in a book titled "Powerful Teacher Education: Lessons from Exemplary Programs". Also, in the book "Mindset: The New Psychology of Success" Dweck stated that fostering a positive and inclusive atmosphere encourages exploration and risk-taking. Develop Assessment and Feedback Mechanisms using formative assessments to monitor progress and adjust the learning path as needed (Black & William, 1998). Provide timely and constructive feedback, focusing on growth and improvement (Hattie & Timperley, 2007). Incorporate Real-World Experiences with internships, field trips, and real-world projects to connect learning with practical applications. Encourage learners to engage with communities and experts in fields of interest, as Wenger describes in a book titled "Communities of Practice: Learning, Meaning, and Identity". Review and Adapt the Curriculum regularly and continuously evaluate the effectiveness of the curriculum through feedback and assessments as described by Stiggins in a book

titled "Assessment for Learning: An Action Guide for School Leaders". Also, Wiggins and McTighe, in a book titled "Understanding by Design" stated that schools should make necessary adjustments to keep the curriculum relevant and challenging. Foster Lifelong Learning with encouragement to set learners' personal learning goals and explore new interests beyond the structured curriculum as described by Knowles in a book titled "Self-Directed Learning: A Guide for Learners and Teachers". Provide resources and strategies for self-directed learning and continuous skill development as Candy described in a book titled "Self-Direction for Lifelong Learning: A Comprehensive Guide to Theory and Practice".

Designing and implementing a personalized curriculum presents educators with various challenges and opportunities. One significant challenge is resource allocation, as personalized learning requires investments in technology, curriculum materials, and trained personnel, as described by Pane et al. in a book titled "Continued Progress: Promising Evidence on Personalized Learning". Moreover, ensuring teachers are adequately trained to implement personalized learning strategies tailored to individual student needs is essential (Mishenina et al., 2023). Equity concerns also arise, as educators must ensure that all students, regardless of socio-economic background or geographic location, have access to personalized learning opportunities (Bishop et al., 2020). Additionally, managing and protecting student data collected for personalized learning purposes raises valid privacy concerns that need careful consideration, as Zhao describes in a book titled "World Class Learners: Educating Creative and Entrepreneurial Students".

However, despite these challenges, personalized learning offers numerous opportunities for innovation in education. For instance, Al-powered adaptive learning technologies can assess student progress in real time and adjust content to meet their individual learning needs (Olanrewaju et al., 2021). This approach not only enhances student engagement by tailoring the curriculum to their interests and learning styles but also fosters flexibility in pacing and depth of learning, as described by Rose and Meyer in a book titled "Teaching Every Student in the Digital Age: Universal Design for Learning". Personalized learning encourages collaborative learning experiences among students with diverse abilities and backgrounds, facilitated by technology, as described by Means et al. in a book titled "Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies". By embracing personalized learning, educators can cultivate a culture of lifelong learning, preparing students for success in an increasingly dynamic and competitive global environment as described by Picciano in a book titled "Blended Learning: Research Perspectives".

In conclusion, while the challenges of resource allocation, teacher training, equity, data privacy, and scalability must be carefully navigated, the innovative opportunities of adaptive technologies, enhanced student engagement, flexibility, collaborative learning, and lifelong learning readiness underscore the potential for personalized learning to significantly improve the quality of education (Tapalova & Zhiyenbayeva, 2022).

#### **METHODS**

This study uses a quantitative approach, and a descriptive correlational type of survey was adopted. The quantitative approach focuses on gathering and analyzing numerical data to understand a phenomenon or test a hypothesis (Mohajan, 2020). Descriptive surveys of a correlational type aim to describe the relationships between variables without manipulating them (List, 2024). However, the researcher looked at how the curriculum in higher education can be adapted to suit students' personality needs and the prevalence of mental health among undergraduates. This study was conducted in Kwara State Public Universities. There are three public Universities in Kwara State: University of Ilorin, Ilorin, Kwara State University, Malete, and National Open University, Ilorin. However, the researchers purposively selected the 2 Universities that run physical classes. National Open University, Ilorin, was excluded from the target population because students are usually not in school to communicate as they practice virtual classes.

The target populations include the University of Ilorin, Ilorin, and Kwara State University, Malete, out of which the sample was drawn.

The sample comprised 1,502 public University undergraduates selected randomly from the selected Public Universities. The study was restricted to Personality traits and mental health among Kwara State University students of Nigeria with a way forward by incorporating a curriculum enabling students to outgrow their mental health and personality. Respondents were given questionnaires to elicit responses. A simple random sampling technique was used to select 1 502 respondents from the target population, and a self-structured Personality Trait Questionnaire (PTQ) and an adapted Emotional Health Scale (EMS) by (Stochl et al., 2022) were used as research instruments for data collection.

The Questionnaire comprised fifteen (15) and thirteen (13) items with four (4) point Likert rating scales. The face and content validity of this instrument was ascertained. The validated instrument was given to two private Universities in Kwara State. Pearson's Product Moment Correlation Statistics (PPMC) correlation was used to analyze the data at a 0.05 significance level. The coefficient of the reliability test was 0.89 and 0.82, respectively. PTQ and EMS were administered to undergraduates, and the data collected was analyzed using the descriptive and inferential statistical tool with a 0.05 significance level. The descriptive statistical tool of frequency count, mean, standard, and deviation was used to analyze the demographic data and answer the research question. Pearson product-moment correlation (PPMC) was used to analyze the hypothesis at a 0.05 significance level. However, the result revealed that one of the independent variables (consciousness personality trait) significantly contributed to the model. However, all independent variables had a negative relationship with the dependent variable. This implies that a unit change (increase) in undergraduates' neuroticism, openness, agreeableness, extraversion, and consciousness personality traits will result in an adverse change (decrease) in mental behavior by 0.094, 0.062, 0.113, 0.95, and 0.564 respectively in mental behavior and learning style.

# **RESULTS AND DISCUSSION**

# Prevalence Of Mental Health Among University Undergraduates in Kwara State, Nigeria

Table 1. Descriptive Statistics of Respondents' Score on Mental Health Behavior

Descriptive Statistics	Scores
Range	80
Mean	26.75
Standard Deviation	8.87
Minimum Score	20
Maximum Score	80
Total Number of Respondents	1502

Source: Research 2024

As shown in **Table 1**, the minimum and maximum scores of the respondents on mental health behavior are 20 and 80, respectively, with a mean (26.75) and standard deviation (8.87). Respondents' scores were categorized into three levels (low, moderate, and high) to determine the prevalence of mental health among the respondents. However, scores that were less than the mean score of 26.75 were considered a low level of mental health behavior. In contrast, those who obtained scores plus one standard deviation above the mean score (27-36) demonstrated moderate levels of mental health, and above 36 (37-100)

implied a high level of mental well-being. The results were classified into low, moderate, and high mental well-being levels.

Based on the first findings in **Table 2** of this study, there was an indication from this result that the prevalence of mental health among undergraduate students of Kwara state was very low. This result supports previous research showing a low prevalence of psychological distress among health profession students studying at KIIT University of Bhubaneswar during the COVID-19 pandemic. It can be further lowered by designing appropriate interventions incorporating healthy lifestyle behaviors and suitable coping strategies, thereby ensuring the sound mental health of these students (Mishra et al., 2023). It is also in line with another study that, overall, students rated their ability to enjoy life more highly than others in terms of mental health well-being, implying that students experienced low mental health behavior (Stochl et al., 2022). The finding of this study negates the previous study that indicated that undergraduates reported significantly higher rates of feelings and behaviors related to poor mental health and adverse effects on academic performance than graduate students (Mishra et al., 2023).

Table 2. General Prevalence of Mental Health Behavior

Responses	Frequency	Percentage (%)
Low	839	55.9
Moderate	491	32.7
High	172	11.5
<b>Total Number of Respondents</b>	1502	100.0

Source: Research 2024

**Table 2** revealed that 839 (55.9%) respondents demonstrated a low level of mental well-being among undergraduates, 491 (32.7%) respondents demonstrated a moderate level, and 172 (11.5%) demonstrated a high level of mental well-being. The above result shows that students who are suffering from low mental well-being are on the high side and take the highest percentage of the total respondents.

**Hypothesis One**: There is no significant relationship between the students' personality traits (extraversion, agreeableness, consciousness, neuroticism, and openness) and mental health behavior. To determine the level of personality traits among the respondents, the respondents' scores were categorized into low, moderate, and high personality traits, and t-test statistical tools were used to determine the differences between the three levels of each trait and the state of mental health among undergraduates. The results are presented in **Tables 3, 4, and 5**, respectively.

**Table 3.** Regression Analysis of Mental Health and Personality Traits (i.e., agreeableness, conscientiousness, neuroticism, openness to experience, and extraversion).

Model	Sum of Squares	Df	Mean Square F	Sig
Regression	875.628	5	175.125	9.813 0.000b
Residual	3462.192	194	17.846	
Total	17350.870	199		

Source: Research 2024

- a. Dependent Variable: mental health
- b. Predictors: (Constant), personality traits (i.e., agreeableness, conscientiousness, neuroticism, openness to experience, and extraversion).

As shown in **Table 4**, all independent variables (i.e. agreeableness conscientiousness, neuroticism, openness, and extraversion) jointly contributed R-Square of 0.512, representing 51.2% to the dependent variable (mental health). To determine the contribution of each of the independent variables, Beta Weight was calculated and the outputs are shown in **Table 5**.

**Table 4.** Regression Model Summary of Personality Traits (i.e., agreeableness, conscientiousness, neuroticism, openness to experience, and extraversion).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.312a	0.512	0.021	9.15877

Source: Research 2024

a. Predictors: (Constant), personality traits (i.e., agreeableness, conscientiousness, neuroticism, openness to experience, and extraversion).

Table 5. Relative contributions of independent variables to adult education students' study habits

Model	Unstandard ized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig
(Constant)	33.54	1.582		21.417	.000
Neuroticism	.094	.142	021	688	0.411
Openness	062	.173	027	769	0.672
Agreeableness	113	.161	116	-3.510	.442
Extraversion	-0.95	.112	.022	.825	.489
Conscientiousness	564	.148	013	.420	0.000

Source: Research 2024

a. Dependent Variable: Mental Health

## Strategies For Incorporating Psychological Factors Into Curriculum Design

Based on the psychological and mental health conditions of Kwara State students, strategies for incorporating psychological factors into curriculum design could include:

#### Assessment and Profiling

Implementing comprehensive assessments to identify personality traits and mental health status of students. Utilizing psychological profiling tools to gather data that inform personalized learning plans. Designing adaptable learning environments that accommodate varying levels of social interaction and sensory input, catering to introverted and extroverted students. Creating spaces that reduce anxiety and stress for students with high neuroticism or mental health challenges. Employing differentiated instruction techniques to cater to different learning styles and preferences. Providing options for self-paced learning and modular content to allow students to progress at their comfort levels.

b. Predictors: (Constant), personality traits (agreeableness, conscientiousness, neuroticism, openness to experience, and extraversion).

c. Intervention: The result of this study negates the finding of the previous study, revealing that neuroticism has a positive predictive influence on the level of depression, as seen by the positive correlation between neuroticism and depression severity (Premkumar et al., 2018). Perfectionism's negative traits, such as worry about errors, effects on dyadic adjustment, agreeableness, and neuroticism, have a more noticeable effect on students (Yoo et al., 2022).

# 2. Mental Health Support

Mental health support is essential for maintaining overall well-being. Engaging in self-care practices such as regular exercise, healthy eating, adequate sleep, mindfulness, and meditation can significantly improve mental health (National Alliance on Mental Illness). Additionally, seeking professional help through therapy, counseling, or psychiatry for medication management is crucial for those experiencing more severe mental health issues.

Social support plays a vital role in mental health. Talking to friends and family, joining support groups, and participating in community activities can provide a sense of connection and reduce feelings of isolation. Effective stress management techniques, including time management, relaxation exercises, and engaging in hobbies and leisure activities, can also contribute to better mental health (Linzer et al., 2021).

For those in crisis, hotlines and text lines offer immediate support. The National Suicide Prevention Lifeline (1-800-273-8255) and the Crisis Text Line (text HOME to 741741) are available for urgent assistance. Online resources such as the National Alliance on Mental Illness (NAMI) and Mental Health America (MHA) provide valuable information and support. Additionally, apps like Headspace offer guided meditation and mindfulness exercises to help manage stress and anxiety. Recognizing when to seek help is critical. Persistent feelings of sadness or anxiety, difficulty functioning in daily life, and thoughts of self-harm or suicide are clear indicators that professional help is needed, as described by the American Psychiatric Association in a book titled "Diagnostic and Statistical Manual of Mental Disorders". Finding a mental health professional can be done through recommendations from primary care physicians, online directories such as Psychology Today or Zocdoc, and local mental health organizations.

The therapy process typically begins with an initial assessment, followed by setting goals for therapy and regular sessions to work through issues. Supporting others with their mental health involves listening and validating their feelings, encouraging professional help, and being patient and understanding as they navigate their recovery journey. They are integrating mental health resources and support within the educational framework. Training educators to recognize and respond to mental health issues, providing appropriate interventions and referrals when necessary (Chu et al., 2022). The study's findings will offer actionable insights for teachers on applying psychological principles to enhance instructional strategies. They will include strategies for creating flexible and adaptive curricula that cater to diverse learning needs. Insights from the study will inform policy changes that support personalized learning initiatives. This includes advocating for policies that promote learners' learning styles.

Customized learning pathways will be developed for each student based on their psychological profile. These pathways will be implemented in the classroom over a specified period (e.g., one academic semester) to observe their impact on educational outcomes. Implementing customized learning pathways requires significant resources, including trained personnel, technological tools, and ongoing support systems. Educators must be properly trained to understand and apply psychological principles. Continuous professional development is essential to keep abreast of the latest research and best practices. Integrating psychological factors and customized learning pathways in curriculum design offers a promising approach to enhancing educational outcomes. By recognizing and addressing students' unique personality traits and mental health needs, educators can create more effective, supportive, and inclusive learning environments.

Research has shown that students with high self-efficacy tend to perform better and experience less stress in adapted learning environments (Zimmerman, 2000). Conversely, high levels of anxiety can impair learning and negatively impact mental health (Hembree, 1988). Motivation plays a dual role; intrinsic motivation generally promotes better mental health, while extrinsic motivation needs careful balance to avoid stress (Vansteenkiste et al., 2006). Resilient students are more likely to succeed in adapted learning

Psychological factors and customized learning pathways in curriculum design

contexts, handling setbacks effectively (Martin & Marsh, 2008). The assessment of the prevalence of psychological distress, associated lifestyle behaviors, and associated coping strategies among the students of the healthcare profession (Mishra et al., 2023).

The relationships among stress, mental health, and academic classification in a national sample of college students. The researchers utilized secondary data from 27 387 college students responding to the fall 2009 American College Health Association-National College Health Assessment. The result indicated that undergraduates reported significantly higher rates of feelings and behaviors related to poor mental health and adverse effects on academic performance than graduate students (Moore & Cracium, 2021). Graduate and undergraduate students reported significantly different levels and sought mental health care services in the future than undergraduates (64.8%),  $\chi$  (1) = 101.12, Cramer's V = .061, p = .001. Stress and mental health differences exist between undergraduate and graduate students. The impact of mother phubbing (Mphubbing) on teenagers involves 2,996 high school students in China (Bai et al., 2020). Regression analysis revealed that Mphubbing positively correlated with academic burnout in adolescents, mediated by mental health. Agreeableness reduced the adverse effects of Mphubbing on mental health, while neuroticism increased the impact of mental health on academic burnout. Thus, agreeableness and neuroticism moderated the indirect effects of Mphubbing on academic exhaustion through mental health.

A moderated mediation model was built to examine the relationships among CT, CERS, neuroticism, and current depression using the SPSS process 3.5 macros. The results revealed that the significant mediating effects of adaptive CERS ( $\beta$  = 0.012) and maladaptive CERS ( $\beta$  = 0.028) between CT and depression were observed (Chu et al., 2022). The impact of mindfulness training on neuroticism and psychological distress over six years in a sample of Norwegian medicine and clinical psychology students who either received the standard MBSR training or a modified version (Hanley et al., 2019). The results indicated that mindfulness training can have a long-lasting influence on neuroticism and that mindfulness-based therapies may successfully lessen clinical symptoms associated with neuroticism. Neuroticism has a positive predictive influence on the level of depression, as seen by the positive correlation between neuroticism and depression severity (Premkumar et al., 2018).

Understanding personality traits and learning styles can provide significant insights into how individuals interact with the world and acquire new knowledge. Personality traits include openness to experience, imagination, curiosity, open-mindedness, and a willingness to try new things. For instance, someone highly open might enjoy exploring new ideas, engaging in creative pursuits, and seeking diverse experiences (Schwaba et al., 2018). Conscientiousness, as highlighted by previous research, is being organized, responsible, disciplined, and goal-oriented (Mwala & Lyakurwa, 2022). A conscientious individual might prefer planned activities, meet deadlines consistently, and pay great attention to detail. Extraversion involves being sociable, outgoing, energetic, and enjoying being around others. Extraverted individuals often feel energized by social interactions, enjoy group activities, and tend to be assertive (Abdulkareem et al., 2023). Agreeableness is characterized by being cooperative, compassionate, trusting, and goodnatured. People high in agreeableness value harmony, are willing to compromise and are considerate of other's feelings (Nuvetha (2016). Neuroticism involves emotional instability, anxiety, and moodiness (Xu et al., 2021). Individuals high in neuroticism may experience stress easily, worry frequently, and have intense emotional reactions.

As outlined by various researchers, learning styles also play a crucial role in how individuals process information. Visual learners prefer to see and visualize information, using diagrams, charts, videos, and written notes to understand concepts (Kern, 2018). As Fleming noted, Auditory learners in a book titled "*Teaching and Learning Styles*" prefer to hear and discuss information (Lei, 2020). They benefit from lectures, discussions, audio recordings, and verbal instructions. Kinesthetic learners prefer hands-on experiences and physical activities. They learn best through activities like experiments, role-playing, and

real-life examples (Mayungbo & Iwuoha, 2020). Reading/writing learners prefer to read and write information. They use lists, essays, reading assignments, and written explanations to grasp concepts. Social learners, identified by Gardner, prefer to learn with others and through social interaction. They enjoy group work, collaborative projects, and study groups. Solitary learners, highlighted by Gardner, prefer to learn alone and through self-study. They benefit from self-paced learning, personal reflection, and individual projects. Recognizing and understanding these personality traits and learning styles can help tailor educational and personal growth strategies, making learning more effective and enjoyable. It is on this basis that the researchers were of the view that students are faced with mental issues as a result of the inability to cope with school stress and other emotional disturbances and why the researchers investigated the relationship between personality traits and mental health among undergraduates of Kwara State.

# CONCLUSION

Mental behavior among undergraduates is increasing at a low rate. These present few challenges for schools and educators, as social, emotional, and legal consequences often accompany The pattern of mental behavior. However, there is no doubt that mental behavior is a severe school risk that is associated with several psychological conditions. Above all, the findings of this study can be used to shape and prevent mental issues using prevention and intervention efforts. So, being aware of the risks and the consequences associated with mental health, school counselors might be at the forefront of promoting a life void of mental health. This would contribute to a safer and healthier school community. Customized learning pathways would serve as an intervention to assist university students at Kwara State. Balancing the need for psychological profiling with concerns about privacy and data security is crucial. Ethical considerations must guide the collection and use of personal data.

Based on the study's findings, the recommendations were made: First, counselors and school administrators should work together to identify the appropriate interventions for both the victims and perpetrators. School counselors should adopt counseling strategies that will build student mental health behavior. Second, Parents and educators can also assist the students in managing their emotional health and personality by exposing them to why they should be mentally stable and what they stand to gain.

# **AUTHOR'S NOTE**

The authors declare that there is no conflict of interest related to the publication of this article and confirm that the data and content of the article are free from plagiarism.

#### REFERENCES

- Abdulkareem, H.B, Bello, J. A & Salami TA. (2023). Self-concept and locus of control as internet predictors among undergraduate students. *ASEAN Journal of Educational Research and Technology* 2(3), 179-188.
- Abdulkareem, H. B., Hassan, A. A., & Suleiman, A. (2023). Personality traits as a correlate of adult education students' study habits. *Indonesian Journal of Multidisciplinary Research*, *3*(2), 203-218
- Abdulkareem, H. B., & Lasis, K. A. (2024). Effects of imago relationship therapy on spousal's emotional instability married teachers in Kwara State, Nigeria. *Inovasi Kurikulum*, *21*(2), 1069-1086.
- Adebayo, B. S. (2022). Work-induced stress and job performance of academic staff in the University of Ilorin, Nigeria. *Indonesian Journal of Multidisciplinary Research*, 2(2), 317-326.

- Adeoye, M. A., Jimoh, H. A., & Abdulkareem, H. B. (2023). Leadership and organizational cultural roles in promoting sustainable performance appraisal and job satisfaction among academic staff. *ASEAN Journal of Economic and Economics Education*, *2*(2), 244-436.
- Aleven, V., McLaughlin, E., Glenn, C., & Koedinger, K. R. (2006). Intelligent tutoring systems with multiple learning activities: Do students need all of them?. *International Conference on Intelligent Tutoring Systems*, *8*(1), 353-362.
- Alexandra O. S. & Monk, C. (2020). Maternal and environmental influences on perinatal and infant development. *The Future of Children*, 30(2), 11-34.
- Arik, S. (2019). The relations among university students' academic self-efficacy, academic motivation, and self-control and self-management levels. *International Journal of Education and Literacy Studies*. 7(4), 23-34.
- Arpentieva, M. R., Minghat, A. D., & Kassymova, G. K. (2022). Mental stress education: The changes in the life and conditions of patients. *Indonesian Journal of Community and Special Needs Education*, 2(2), 111-118.
- Bademci, H. Ö., Karadayı, E. F., Karabulut, I. G. P., & Vural, N. B. (2018). The prevention of early school leaving by increasing students' self-esteem. *Turk PsikolojiYazilari*, 21(41), 74-77.
- Bai, Q., Bai, S., Dan, Q., Lei, L., & Wang, P. (2020). Mother phubbing and adolescent academic burnout: The mediating role of mental health and the moderating role of agreeableness and neuroticism. *Personality and Individual Differences*, *155*(1), 1-7.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497-529.
- Bell, S. (2010). Project-based learning for the 21st century: Skills for the future. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(2), 39-43.
- Bishop, P. A., Downes, J. M., Netcoh, S., Farber, K., DeMink-Carthew, J., Brown, T., & Mark, R. (2020). Teacher roles in personalized learning environments. *The Elementary School Journal*, 121(2), 311-336.
- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice, 5*(1), 7-74.
- Bleidorn, W., Hopwood, C. J., Back, M. D., Denissen, J. J., Hennecke, M., Hill, P. L., & Zimmermann, J. (2021). Personality trait stability and change. *Personality Science*, *2*(1), 1-20.
- Bloom, B. S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, *13*(6), 4-16.
- Buzduga, A. C. (2018). The relation between the personality factors extraversion, neuroticism, general cognitive aptitude, and critical thinking. *Educatia*, *21*(16), 34-38.
- Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology*, *56*(1), 453-484.
- Chu, Q., Wang, X., Yao, R., Fan, J., Li, Y., Nie, F., & Tang, Q. (2022). Childhood trauma and current depression among Chinese university students: A moderated mediation model of cognitive emotion regulation strategies and neuroticism. *BMC Psychiatry*, 22(1), 1-13.

- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227-268.
- Dooshima, M. P. (2018). A predictive model for the risk of mental illness in Nigeria using data mining. *International Journal of Immunology*, *6*(1), 5-16.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*(2), 256-273.
- Entwistle, N., & McCune, V. (2004). The conceptual bases of study strategy inventories. *Educational Psychology Review*, *16*(4), 325-345.
- Hanley, A. W., de Vibe, M., Solhaug, I., Gonzalez-Pons, K., & Garland, E. L. (2019). Mindfulness training reduces neuroticism over a 6-year longitudinal randomized control trial in Norwegian medical and psychology students. *Journal of Research in Personality*, 82(1), 1-6.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112.
- Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. *Review of Educational Research*, *58*(1), 47-77.
- Kang, H. K., Rhodes, C., Rivers, E., Thornton, C. P., & Rodney, T. (2021). Prevalence of mental health disorders among undergraduate university students in the United States: A review. *Journal of Psychosocial Nursing and Mental Health Services*, *59*(2), 17-24.
- Kasmana, K., Dewi, A. C., Hermiyah, M., Asifa, V., & Maulana, H. (2021). Designing multimedia applications for nutrition education and managing stress. *Indonesian Journal of Teaching in Science*, *1*(1), 27-38.
- Kern, D. (2018). Research on epistemological models of older adult education: The need for a contradictory discussion. *Educational Gerontology*, *44*(5-6), 338-353.
- Komarraju, M., & Karau, S. J. (2005). The relationship between the big five personality traits and academic motivation. *Personality and Individual Differences*, 39(3), 557-567.
- Komarraju, M., Karau, S. J., Schmeck, R. R., & Avdic, A. (2011). The big five personality traits, learning styles, and academic achievement. *Personality and Individual Differences*, *51*(4), 472-477.
- Kulik, J. A., & Kulik, C. L. C. (1991). Effectiveness of computer-based instruction: An updated analysis. *Computers in Human Behavior, 7*(1-2), 75-94.
- Lee, D., Huh, Y., Lin, C. Y., & Reigeluth, C. M. (2018). Technology functions for personalized learning in learner-centered schools. *Educational Technology Research and Development*, 66(1), 1269-1302.
- Lei, L. Y. C., Ismail, M. A. A., Mohammad, J. A.M., & Yusoff, M. S. B. (2020). The relationship of smartphone addiction with psychological distress and neuroticism among university medical students. *BMC Psychology*, 8(97), 1-9.
- Linzer, M., Stillman, M., Brown, R., Taylor, S., Nankivil, N., Poplau, S., & Ravi, S. (2021). Preliminary report: US physician stress during the early days of the COVID-19 pandemic. *Mayo Clinic Proceedings: Innovations, Quality & Outcomes, 5*(1), 127-136.
- List, A. (2024). The limits of reasoning: students' evaluations of anecdotal, descriptive, correlational, and causal evidence. *The Journal of Experimental Education*, 92(1), 1-31.

- Martin, A. J., & Marsh, H. W. (2008). Academic resilience and its psychological and educational correlates: a construct validity approach. *Psychology in the Schools, 45*(3), 229-245.
- Mayungbo, O. A. & Iwuoha, C. C. (2020). Can university undergraduates improve their levels of happiness by being grateful and living a purposeful life?. *European Journal of Psychological Research*, 7(2), 113-125.
- Mishenina, H., Šimanskienė, L., & Župerkienė, E. (2023). Digital innovations as the basis for the implementation of the concept for the development of t-shaped skills in higher education. *Quaderni di Comunità: Persone, Educazione e Welfare Nella Società*, *5*(3), 47-89.
- Mishra, J., Samanta, P., Panigrahi, A., Dash, K., Behera, M. R., & Das, R. (2023). Mental health status, coping strategies during COVID-19 pandemic among undergraduate students of healthcare profession. *International Journal of Mental Health and Addiction*, *21*(1), 562-574.
- Mohajan, H. K. (2020). Quantitative research: a successful investigation in natural and social sciences. *Journal of Economic Development, Environment, and People, 9*(4), 50-79.
- Moore, K., & Craciun, G. (2021). Fear of missing out and personality as predictors of social networking sites usage: The Instagram case. *Psychological Reports*, *124*(4), 1761-1787.
- Moore, S. A., Dowdy, E., Nylund-Gibson, K., & Furlong, M. J. (2019). An empirical approach to complete mental health classification in adolescents. *School Mental Health*, *11*(1), 438-453.
- Mwala, G., & Lyakurwa, S. (2022). Psychological study of stress levels among secondary school students with albinism in Tanzania. *Indonesian Journal of Community and Special Needs Education*, *2*(2), 137-148.
- Nuvetha, S. K. (2016). A study on the relation between study habits and personality traits of higher secondary students. *International Journal of Research Granthaalayah*, *4*(5), 40-43.
- Obeten, S O. (2021). Personality traits as a determinant of English language study habit among secondary school students in Cross State, Nigeria. *International Journal of Educational Research*, 9(1), 57-83.
- Olanrewaju, M. K., Suleiman, Y., & Abdulkareem, H. B. (2021). Effects of indigenous game strategies on academic performance of pupils in numeracy in Ilorin East local government area of Kwara state, Nigeria. *Journal of Teaching and Teacher Education*, 9(2), 71-80.
- Oz, H. (2014). Big five personality traits and willingness to communicate among foreign language learners in Turkey. *Social Behavior and Personality: An International Journal*, 42(9), 1473-1482.
- Paliwal, R. & Talesra, C. (2019). A study of the personality type of single and sibling adolescents. *The International Journal of Indian Psychology*, 7(4), 203-208.
- Piaget, J. (1964). Part I: Cognitive development in children: Piaget development and learning. *Journal of Research in Science Teaching*, 2(3), 176-186.
- Premkumar, P., Onwumere, J., Betts, L., Kibowski, F., & Kuipers, E. (2018). Schizotypal traits and their relation to rejection sensitivity in the general population: Their mediation by quality of life, agreeableness and neuroticism. *Psychiatry Research*, 267(1), 201-209.
- Riyanto, M., Nandiyanto, A. B. D., Kurniawan, T., and Bilad, M. R. (2022). Management of character education in the scope of elementary school students in the distance learning period. *Indonesian Journal of Multidisciplinary Research*, *2*(1), 1-8.

- Roberts, B. W. (2018). A revised sociogenomic model of personality traits. *Journal of Personality*, 86(1), 23-35.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68-78.
- Schneider, M., & Preckel, F. (2017). Variables associated with achievement in higher education: A systematic review of meta-analyses. *Psychological Bulletin*, *143*(6), 565-600.
- Schwaba, T., Luhmann, M., Denissen, J. J. A., Chung, J. M. & Bleidorn, W. (2018). Openness to experience and culture-openness transactions across the lifespan. *Journal of Personality and Social Psychology, 115*(1), 118-136.
- Schwaba, T., Robins, R. W., Grijalva, E., & Bleidorn, W. (2019). Does openness experience matter in love and work? domain, facet, and developmental evidence from a 24-year longitudinal study. *Journal of Personality*, 87(5), 1074-1092.
- Stochl, J., Soneson, E., Stuart, F., Fritz, J., Walsh, A. E., Croudace, T., & Perez, J. (2022). Determinants of patient-reported outcome trajectories and symptomatic recovery in Improving Access to Psychological Therapies (IAPT) services. *Psychological Medicine*, *52*(14), 3231-3240.
- Sweller, J. (1988). Cognitive load during problem solving: Affects on learning. *Cognitive Science*, *12*(2), 257-285.
- Syomwene, A., Kitainge, K., & Mwaka, M. (2013). Psychological influences in the curriculum decision-making process. *Journal of Education and Practice*, *4*(8), 173-180.
- Tapalova, O., & Zhiyenbayeva, N. (2022). Artificial intelligence in education: AIEd for personalized learning pathways. *Electronic Journal of e-Learning*, *20*(5), 639-653.
- Umegaki, Y., & Higuchi, A. (2022). Personality traits and mental health of social networking service users: a cross-sectional exploratory study among Japanese undergraduates. *Computers in Human Behavior Reports, 6*(1), 1-11.
- Van den Bergh, B. R., van den Heuvel, M. I., Lahti, M., Braeken, M., de Rooij, S. R., Entringer, E., Hoyer, D., Roseboom, T., Raikkonen, K., King, S., & Schwab, M. (2020). Prenatal developmental origins of behavior and mental health: The influence of maternal stress in pregnancy. *Neuroscience and Biobehavioral Reviews*, *117*(1), 26-64.
- Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2006). Motivating learning, performance, and persistence: The synergistic effects of intrinsic goal contents and autonomy-supportive contexts. *Journal of Personality and Social Psychology*, 87(2), 246-260.
- Wang, A. I. (2015). The wear out effect of a game-based student response system. *Computers & Education, 82*(1), 217-227.
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, *90*(2), 202-209.
- Xu, Y., Su, S., Jiang, Z., Guo, S., Lu, Q., Liu, L., & Lu, L. (2021). Prevalence and risk factors of mental health symptoms and suicidal behavior among university students in Wuhan, China during the COVID-19 pandemic. *Frontiers in psychiatry*, *12*(1), 1-13.
- Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist*, 47(4), 302-314.

Psychological factors and customized learning pathways in curriculum design

- Yoo, J., You, S., and Lee, J. (2022). Relationship between neuroticism, spiritual well-being, and subjective well-being in Korean University students. *Religions*, *13*(6), 1-10.
- Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology*, *25*(1), 82-91.
- Zimmermann, J., & Roberts, B. (2019). The policy relevance of personality traits. *American Psychologist*, 74(9), 1056-1067.