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Developing a Technology-Enhanced Digital Counseling Model to Improve Students' Learning Comfort and Happiness

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ABSTRACT

Purpose of the study: This study aims to develop and test a digital counseling model that integrates Mindfulness Cognitive Behavioral Harmony (MCBH) with digital tools to enhance students' learning comfort and happiness in educational contexts.

Methodology: A Research and Development design using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) was employed. Data were collected through questionnaires assessing model validity, practicality, learning comfort, and learning happiness from 280 elementary school students in Bali, Indonesia. The data were analyzed using descriptive and inferential statistics to determine the effectiveness of the model.

Main Findings: The study found that the MCBH digital counseling model significantly enhanced students' emotional regulation, learning comfort, and happiness. The digital tools used, including mobile applications and online platforms for mindfulness exercises and cognitive behavioral therapy techniques, were highly effective in providing accessible, continuous emotional support. This technology not only complemented traditional counseling methods but also contributed to the learning process by fostering sustained engagement, improved focus, and enhanced academic performance, showing how digital platforms can serve a pedagogical function in education.

Novelty/Originality of this study: This study introduces a digital counseling model integrating mindfulness, cognitive behavioral therapy, and local cultural wisdom (Tri Hita Karana). It demonstrates how digital tools enhance emotional regulation, student engagement, and learning outcomes through continuous support and real-time feedback. The model contributes to educational technology by offering a scalable, sustainable, and culturally responsive approach to student well-being and learning support.

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1. INTRODUCTION

In the 21st century, technological advancements have rapidly transformed many facets of life, including education. The integration of digital tools in education has become essential for enhancing the learning experience, supporting students' emotional well-being, and improving overall academic outcomes [1]-[4]. Online learning

platforms, mobile applications, and digital tools for emotional support are reshaping how learning is approached and delivered [5]-[8]. The global rise of digital technology offers unprecedented opportunities to integrate innovative solutions that support students' mental health, especially concerning stress, anxiety, and emotional regulation, which are becoming increasingly prevalent among learners today [9]-[12]. Technology is not just a support for well-being but also plays a key role in enhancing learning experiences by making emotional and academic support more accessible. As education systems adapt to these changes, it is crucial to leverage technology to foster a more supportive, accessible, and balanced learning environment [13]-[15]. Technology is not just a support for well-being but also plays a key role in enhancing learning experiences by making emotional and academic support more accessible [16]-[18]. As education systems adapt to these changes, it is crucial to leverage technology to foster a more supportive, accessible, and balanced learning environment.

Among the many challenges students face today, managing academic stress, maintaining emotional balance, and fostering well-being are crucial factors influencing learning outcomes. Academic stress, in particular, has become a significant concern, as students often struggle to cope with the high expectations placed upon them. The pressure to perform well academically can lead to mental health issues, such as anxiety, depression, and burnout, which adversely affect students' learning comfort and happiness [19]-[21]. In response to this, traditional counseling models, although effective, may not always provide the ongoing support necessary for students to manage their emotions and stress effectively. This is where the integration of digital tools such as mobile apps and online platforms for delivering counseling and mindfulness exercises offers an innovative solution [22]-[24]. The MCBH-based digital counseling model we developed aims to fill this gap by providing ongoing emotional support, as well as integrating technology that supports active student engagement in their learning process. By integrating mindfulness and cognitive-behavioral techniques with digital platforms, students can receive continuous, on-demand support that enhances their emotional regulation and learning experience.

The combination of Mindfulness, Cognitive Behavioral Therapy (CBT), and technology provides a novel approach to counseling that not only addresses students' academic stress but also promotes their overall emotional well-being. Mindfulness practices help students become more aware of the present moment, manage stress, and improve self-regulation, while CBT offers practical tools for challenging negative thoughts and behaviors [25]-[27]. Moreover, technology is integrated to facilitate these processes, offering scalable solutions to deliver mindfulness practices and CBT techniques in a way that can be easily accessed by students anytime, anywhere. Furthermore, integrating the concept of Tri Hita Karana, a Balinese philosophy emphasizing harmony with God, others, and nature, enriches this framework, creating a holistic counseling model that supports students' mental, emotional, and social well-being [28]-[30]. This study seeks to develop and test a digital counseling model that combines MCBH with technology to enhance students' learning comfort and happiness, addressing the growing need for innovative and accessible solutions in student counseling.

This study is underpinned by several key theoretical frameworks that guide the development of the Mindfulness Cognitive Behavioral Harmony (MCBH) model. Mindfulness-Based Stress Reduction (MBSR), developed by Kabat-Zinn [31], forms the core of the mindfulness aspect of the model. MBSR emphasizes the importance of being present in the moment, fostering emotional regulation, and reducing stress [32]-[36]. Studies have shown that mindfulness practices significantly enhance students' ability to cope with stress and improve their mental well-being [31], [36], [37], [38].

Cognitive Behavioral Therapy (CBT) focuses on the relationship between thoughts, emotions, and behaviors [39], [40]. CBT aims to identify and alter negative or irrational thought patterns, helping individuals manage their emotions and behaviors more effectively. This approach has been widely used to address psychological issues, including stress and anxiety, and has proven effective in improving emotional resilience [41]-[43]. The addition of Tri Hita Karana, a Balinese philosophy emphasizing spiritual, social, and environmental harmony, further enriches this counseling framework, promoting holistic well-being.

Incorporating technology into counseling enhances its accessibility and effectiveness. The Technology Acceptance Model (TAM) suggests that the perceived usefulness and ease of use of technology impact its adoption in therapeutic contexts [44]-[46]. Digital tools, such as mobile apps and online platforms, enable continuous, on-demand support for students to practice mindfulness, apply CBT techniques, and monitor their emotional well-being. Research indicates that technology-enhanced interventions can improve engagement, increase accessibility, and offer sustained support outside traditional counseling sessions [47]-[49]. This study combines Mindfulness, CBT, Tri Hita Karana, and technology to develop a digital counseling model aimed at improving students' emotional and psychological well-being in educational settings.

Recent research has highlighted the importance of integrating digital tools into counseling and mental health support for students. Nwadi et al. [27] examined the effectiveness of Cognitive Behavioral Therapy in addressing academic stress among students and found significant improvements in emotional regulation and self-efficacy. Similarly, Ibrahim et al. [50] demonstrated that CBT interventions can help students improve their locus of control, thereby enhancing their ability to cope with academic challenges and stress. These findings support the potential for CBT to address the emotional needs of students in educational contexts. Mindfulness, as a complementary technique, has also gained recognition for its benefits in reducing stress and improving emotional

regulation. A study by Bamber et al. [51] confirmed that mindfulness-based interventions improve focus, reduce anxiety, and promote a sense of calm among students. Moreover, Oehmeet al. [52] explored how trauma-informed positive education could strengthen vulnerable students by incorporating mindfulness and positive psychology, showing its potential for fostering resilience and well-being in challenging academic environments.

However, while there is extensive research on the individual effectiveness of Mindfulness and CBT, limited studies have explored their integration with technology in educational settings. Recent studies such as Denecke et al. [53] and Yogeswaran et al. [54] have pointed out that technology can enhance the accessibility and effectiveness of psychological interventions, yet few studies have applied this in the context of Mindfulness Cognitive Behavioral Therapy (MCBT) for school students. This gap presents an opportunity for innovation by integrating these practices with digital platforms that provide continuous support for students' emotional and psychological needs.

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Additionally, while technology has been shown to enhance mental health support, there is limited research on how Mindfulness Cognitive Behavioral Harmony, a model that combines mindfulness, CBT, and local cultural values (such as Tri Hita Karana), can be integrated into digital tools for students in educational settings. This study aims to address this gap by developing and testing a digital counseling model that merges MCBH with technology to improve learning comfort and happiness among students.

The gap in this research clearly lies in the lack of educational technology models that integrate emotional learning support into education. Most existing studies focus on only one technique either Mindfulness or CBT and fewer explore combining both techniques with digital tools. While technology has been shown to improve mental health support, there has been little research integrating Mindfulness Cognitive Behavioral Harmony with digital tools to provide ongoing emotional support to students in an educational context. This study aims to address this gap by developing and testing a digital counseling model that combines MCBH with technology to improve student learning comfort and happiness. By integrating Mindfulness, CBT, and local cultural values (Tri Hita Karana), this research introduces a holistic, culturally relevant, and innovative technology-based counseling model, offering a more affordable and accessible solution for more students.

The uniqueness or novelty of this research lies in the integration of Mindfulness, CBT, and Tri Hita Karana in a digital counseling model for students. While previous studies have explored Mindfulness and CBT separately, this research introduces the integration of these three aspects in an educational context, offering a more holistic approach. Furthermore, the use of technology to deliver and support this counseling model provides an innovative solution for ongoing emotional support for students, offering a more affordable and scalable approach that can be applied in various educational contexts.

The urgency of this research is crucial, given the existing gap in educational technology models that provide ongoing emotional support through digital tools. This research is not only relevant to addressing student emotional well-being issues, but also serves to develop technology-based counseling models that are more accessible to students around the world. The model we have developed offers great potential for improving student engagement and learning outcomes, as well as providing new insights into how educational technology can support student emotional well-being and engagement in the future.

This study aims to develop a digital counseling model that integrates Mindfulness Cognitive Behavioral Harmony with technological tools to support students' learning experiences. It seeks to evaluate the effectiveness of the model in enhancing students' learning comfort and happiness, as well as to assess its practicality and applicability in elementary and high school settings to ensure feasibility for broader implementation. In addition, this study explores how the integration of Tri Hita Karana can enhance students' emotional and social well-being within educational contexts.

2. RESEARCH METHOD

2.1. Research Design

This study employed a Research and Development (R&D) design using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), which outlines the stages undertaken in the research process

[7], [55], [56], [57]. The ADDIE model is a widely accepted framework for developing instructional materials and interventions, particularly useful for creating digital counseling models [4], [7], [58]. This process starts with the analysis stage, where the needs for developing the counseling model are identified, focusing on how digital tools can effectively enhance the Mindfulness Cognitive Behavioral Harmony Counseling Model. In the design stage, the MCBH model was constructed and integrated with specific digital features such as mobile applications for Mindfulness exercises and CBT techniques. In the development stage, the model underwent validation, practicality, and effectiveness testing, focusing on the technological integration to ensure the model's delivery through digital platforms (mobile apps, online platforms). In the implementation stage, the model was tested in a larger group using digital tools such as mobile apps for Mindfulness exercises, CBT techniques, and real-time emotional tracking through online platforms. The evaluation stage assessed the effectiveness of the MCBH model in improving students' learning comfort and happiness, emphasizing the technological components and the interaction between students and technology to foster continuous support in emotional regulation. The digital features integrated into the model are key components that provide real-time feedback and support, and allow students to engage continuously with the counseling model on their own terms. This study develops a digital counseling product, not just a conceptual counseling model, to directly enhance learning comfort and emotional well-being [59]-[61]. An illustration of the development model is presented in Figure 1.

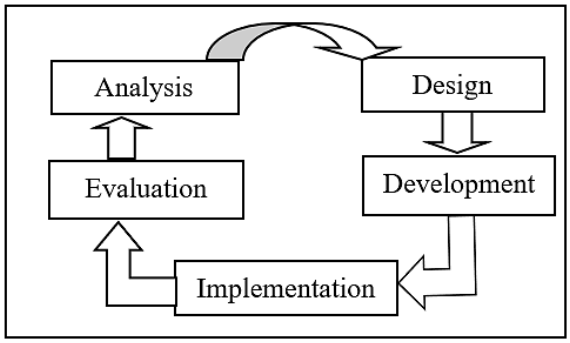

Figure 1. Illustration of the ADDIE Research and Development Model

2.2. Population and Sample

The population of this study comprised all public elementary school students in the Province of Bali, Indonesia, in 2024, totaling 338,529 students (174,495 males and 164,034 females). The distribution by regency/city and gender is shown in Table 1.

Table 1. Distribution of Public Elementary School Students by Regency/City and Gender in Bali, Indonesia in 2024 who are Members of the Population

Regency/City	Male Students	Famale Students	Total
Buleleng	33.049	31.143	64.192
Jembrana	11.311	10.347	21.658
Tabanan	15.896	14.799	30.695
Badung	24.465	22.837	47.302
Gianyar	20.428	19.258	39.686
Klungkung	8.456	7.989	16.445
Bangli	11.022	10.284	21.306
Karangasem	21.289	20.326	41.615
Kota Denpasar	28.579	27.024	55.603
Total	174.495	164.034	338.529

The sample size was determined using the Krejcie and Morgan table and selected via a multi-stage cluster random sampling technique, ensuring regency/city representation. Stage 1: Randomly selected 1–2 schools per regency/city. Stage 2: Randomly selected one class from grades 4, 5, or 6. Stage 3: Assigned selected classes to either the experimental or control group randomly. Only equivalent-grade classes were used in both experimental and control groups. The sample distribution is presented in Table 2. Ethical clearance approval was obtained from the Research Ethics Committee of the Faculty of Medicine, Ganesha University of Education, certificate number: 134/UN48.24.11/LT/2024.

Sample size was determined using the Krejcie and Morgan table and selected via a multi-stage cluster random sampling technique ensuring regency/city representation. Stage 1: Randomly selected 1–2 schools per regency/city. If a school had parallel classes (e.g., 4A and 4B), only one school was selected. If not, two schools were selected. Stage 2: Randomly selected one class from grades 4, 5, or 6. Stage 3: Assigned selected classes to

either the experimental or control group randomly. Only equivalent-grade classes were used in both experimental and control groups. The sample distribution is presented in Table 2. This research has received ethical clearance approval from the Research Ethics Committee of the Faculty of Medicine, Ganesha University of Education with certificate number: 134/UN48.24.11/LT/2024.

Table 2. Distribution of Public Elementary School Students by Regency/City, School, Class, and Gender in Bali, Indonesia (2024) who are Members of the Sample.

Regency/City	School	Grade	Male	Famale	Total
Kabupaten Buleleng	Public Elementary School 3 Banyuasri and Public Elementary School 6 Banjar Tegal	6	43	9	52
Kabupaten Jembrana	Public Elementary School 3 Dauh Waru and Public Elementary School 6 Dauh Waru	5	15	3	18
Kabupaten Tabanan	Public Elementary School 1 Marga and Public Elementary School 3 Marga	5	20	5	25
Kabupaten Badung	Public Elementary School 1 Munggu	6	31	7	38
Kabupaten Gianyar	Public Elementary School 1 Pupuan and Public Elementary School 4 Pupuan	5	27	6	33
Kabupaten Klungkung	Public Elementary School 1 Semara Pura Kangin	5	11	3	14
Kabupaten Bangli	Public Elementary School 2 Kawan	4	15	3	18
Kabupaten Karangasem	Public Elementary School 1 Nawa Kerti Abang	4	27	6	33
Kota Denpasar	Public Elementary School 3 Peguyangan	6	41	8	49
	Total		230	50	280

2.2. Data Collection and Instruments

Data collection in this study utilized questionnaires developed by the researchers, designed specifically to assess the effectiveness, validity, and practicality of the digital counseling model, particularly its technological components. The following four instruments were used for data collection:

1. Counseling Model Validity Questionnaire
2. Counseling Model Practicality Questionnaire
3. Learning Comfort Questionnaire
4. Learning Happiness Questionnaire

These instruments were designed to assess the effectiveness of the model and technological integration (mobile apps, digital platforms for tracking progress, etc.) in enhancing emotional regulation and learning outcomes. The theoretical foundations for these instruments are rooted in the utility, feasibility, and accuracy principles, as articulated by Davis, Hofmann et al., and Chiu et al. Davis emphasizes the importance of relationships and usefulness in educational contexts [62], while Hofmann et al. provide evidence on the practical application of CBT in improving emotional regulation [63]. Chiu et al. highlight the role of technology in enhancing educational engagement and well-being [64], which further supports the validity and practicality of the digital tools integrated in this study.,

2.2. Counseling Model Validity Questionnaire

The counseling model validity questionnaire was developed in four stages: (1) Developing the grand theory, (2) Creating the questionnaire blueprint, (3) Writing the questionnaire items, and (4) Conducting content validity testing. The technological integration was evaluated by examining the effectiveness of digital tools in delivering Mindfulness exercises and CBT techniques. This included evaluating mobile apps and online platforms used for continuous emotional support. Experts in counseling, instructional technology, and Balinese culture assessed the relevance and usability of the digital aspects of the model [59].

The grand theory underpinning this questionnaire states that the validity of a counseling model refers to three aspects: utility, feasibility, and accuracy. A counseling model is considered valid if it is useful, feasible, and accurate [62], [64], [65]. These aspects are grounded in well-established theoretical frameworks. Utility includes usefulness for counselors, clients, and as a reference in counseling implementation, as suggested by Davis, who emphasized the role of relationships in educational contexts [62]. Feasibility includes compatibility with students' issues, needs, target group ability, and counselor competence, along with affordability and resource availability, as discussed in Hofmann et al., who addressed the practicality of CBT in educational settings [63], [66]. Accuracy covers counseling philosophy, human nature, key concepts, client characteristics, main goals, counseling conditions, syntax, and techniques, all of which are supported by Chiu et al. [64], who emphasized the integration of technology in educational interventions. The questionnaire blueprint is presented in Table 3.

Table 3. Blueprint for Counseling Model Validity Questionnaire

Aspect	Indicators	Number of Item
Utility	Useful for teachers to help students improve learning comfort and happiness	1
	Useful for students in counseling to improve comfort and happiness	1
	Useful as a reference for implementing the Mindfulness Cognitive Behavioral Harmony Model	1
Feasibility	Relevant to current student issues in comfort and happiness	1
	Relevant to solve the scarcity of innovative counseling models	1
	Relevant to upper-grade elementary students' capabilities	1
	Suitable for counseling teachers' capabilities	1
	Does not require high costs	1
Uccuracy	Relevant to current student issues in comfort and happiness	1
	Relevant to solve the scarcity of innovative counseling models	1
	Relevant to upper-grade elementary students' capabilities	1
	Suitable for counseling teachers' capabilities	1
	Does not require high costs	1
	Requires minimal resources	1

The questionnaire includes 17 items with 2 response options: relevant or not relevant. Experts in counseling, instructional technology, and Balinese culture were asked to assess item relevance. Content validity was tested using Gregory's model [67] with the following formula:

$$V = A / (A + B + C + D + E + F + G + H) \quad ...(1)$$

Where: V = content validity coefficien, A = number of items marked relevant by all experts, H = number of items marked not relevant by all experts, B–G = number of items with mixed expert responses.

2.2. Counseling Model Practicality Questionnaire

The practicality questionnaire assessed the ease of use, understanding, and implementation of the digital counseling model. It focused on the technological tools used, such as mobile apps for Mindfulness exercises and CBT resources. Feedback was collected regarding the usability of these digital platforms and the ease with which students, counselors, and educators could integrate these tools into their daily routines. This step was essential to determine how technology-mediated student engagement would facilitate long-term use of the model [63], [68], [69]. The blueprint of Counseling Model Practicality Questionnaire presented in table 4.

Table 4. Blueprint for Counseling Model Practicality Questionnaire

Variable	Indicator	Number of Items
Practicality of Counselling Model	The model is easy to understand	1
	The model requires minimal preparation	1
	The model is easy to implement	1
	The model is easy to evaluate	1

2.6. Learning Comfort and Learning Happiness Questionnaires

The Learning Comfort Questionnaire assessed the physical, emotional, and social aspects of students' learning environments, with a specific focus on the influence of digital tools such as mobile apps for Mindfulness or CBT exercises. The Learning Happiness Questionnaire measured students' overall happiness in their learning environments, including the impact of the digital counseling model and the technology-enhanced support on their emotional and social well-being. Both questionnaires used a Likert scale to assess students' perceptions of their learning environments and the impact of digital counseling tools [70], [71].

Developed in six stages: grand theory formulation, blueprint development, item writing, content validity, item validity, and reliability testing. Grand theory defines comfort as how students feel at ease interacting with peers, instructors, and the learning environment by Sanders and McCormick [72], [73]. It is a subjective perception that includes internal and external classroom conditions. Comfort components include: Peers, Instructors, Learning process (objectives, materials, media, methods, evaluation), Rules, Physical environment (cleanliness, lighting, temperature, seating ergonomics, noise, music). The blueprint of Learning Comfort Questionnaire Presented in Table 5.

Table 5. Blueprint for Learning Comfort Questionnaire

Aspect	Indicator	F	UF	Item No.	Total
Peer Interaction	In-class peer interaction	1	1	1, 21	2
	Outside class peer interaction	1	1	2, 22	2
Instructors	Interaction with teachers in class	1	1	3, 23	2
	Outside class interaction	1	1	4, 24	2
	Interaction with parents during learning	1	1	5, 25	2
Learning Process	Learning objectives	1	1	6, 26	2
	Subject content	1	1	7, 27	2
	Use of library/resources	1	1	8, 28	2
	Nature as a learning source	1	1	9, 29	2
	Learning media	1	1	10, 30	2
	Learning methods	1	1	11, 31	2
	Evaluation method	1	1	12, 32	2
Rules	Rule concepts	1	1	13, 33	2
	Rule implementation	1	1	14, 34	2
Physical Environment	Cleanliness	1	1	15, 35	2
	Lighting	1	1	16, 36	2
	Room temperature	1	1	17, 37	2
	Seating ergonomics	1	1	18, 38	2
	Background music	1	1	19, 39	2
	Noise level	1	1	20, 40	2
	Total Items				40

Responses are rated on a 4-point Likert scale: *Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1)*. Validity and reliability tested using part-whole correlation and Cronbach's alpha (via SPSS 22).

Happiness in learning is defined as a positive emotional state derived from: Parahyangan (Spiritual connection), Pawongan (Social and personal well-being), Palemahan (Environmental satisfaction). Blueprint for Learning Happiness Questionnaire Based on Tri Hita Karana presented in table 6.

Table 6. Blueprint for Learning Happiness Questionnaire Based on Tri Hita Karana

Aspect	Indicator	No. of Items	Item Numbers	Total
Parahyangan	Belief in the greatness of God	3	1–3	3
	Belief success/failure is determined by God	1	4	1
	Sincere learning with trust in divine reward	2	5–6	2
	Gratitude for learning experiences	3	7–9	3
Pawongan	Gratitude for physical and psychological condition	9	10–18	9
	No conflict with self and others	4	19–22	4
	Fulfillment of learning needs	2	23–24	2
	Feeling valued and appreciated	5	25–29	5
Palemahan	Satisfaction with home environment	5	30–34	5
	Satisfaction with school environment	5	35–39	5
	Satisfaction with local surroundings	6	40–45	6
	Total Items			45

Rated on the same 4-point Likert scale as above. Validity and reliability tests followed the same procedures as the comfort questionnaire. The results of the validity and reliability tests of all instruments used to collect data in this study are presented in Table 7.

Table 7. Results of Instrument Validity and Reliability Tests

Instrument Type	Content Validity	Item Validity	Reliability
Counseling Model Validity	1	–	–
Counseling Model Practicality	1	–	–
Learning Comfort Questionnaire	1	0.313 to 0.807	0.956
Learning Happiness Questionnaire	1	0.283 to 0.683	0.951

2.7. Data Analysis

The data collected were analyzed using both qualitative and quantitative methods. Quantitative data were analyzed through descriptive statistics to evaluate the effectiveness of the digital counseling model in improving students' learning comfort and happiness. Qualitative data from open-ended responses were analyzed thematically

to assess how students interacted with the technology and their perceptions of the digital counseling model. Technology integration was assessed based on students' experiences with digital platforms and the continuous support provided by mobile applications and online resources [60].

3. RESULTS AND DISCUSSION

3.1. Design Building a Counseling Model Mindfulness-Cognitive Behavioral-Harmony

Design-build counseling model Mindfulness Cognitive Behavioral Harmony produced from this study covers the following components: the nature of the model, views on the nature of humans, key concepts, the nature of problematic individuals, the nature of counseling, conditions for change, counseling situations, and mechanisms for change (syntax and counseling techniques). In full, the design of the Mindfulness-Cognitive Behavioral-Harmony counseling model is presented in Table 8.

Table 8. Stages of the Mindfulness Cognitive Behavioral Harmony Model

No.	Stages	Description
1	Initial Assessment	At this stage, the counselor conducts an initial assessment to understand the client's emotional and psychological condition. The counselor introduces the concept of mindfulness to the client, explaining how full awareness can aid in managing stress and emotions. Activities in this phase include discussions on counseling objectives, an introduction to mindfulness techniques such as breathing meditation and body scanning, and the establishment of a clear counseling contract.
2	Identification	In this stage, the client collaborates with the counselor to identify negative thought patterns or cognitive distortions affecting their emotions and behaviors. The counselor employs cognitive-behavioral techniques to assist the client in evaluating and replacing unproductive thought patterns. Activities include thought journaling, discussing examples of automatic thoughts, and utilizing cognitive tools such as cognitive restructuring worksheets.
3	Reflection	The counselor integrates the harmony values of Tri Hita Karana into the counseling process. Clients are encouraged to reflect on harmony with God (Parahyangan), harmony with others (Pawongan), and harmony with nature (Palemahan) within their daily lives. Activities include discussions about cultural values, exploring how these values can be applied in interpersonal relationships and learning environments, and engaging in spiritual and environmental reflection exercises.
4	Implementation	This stage involves the simultaneous implementation of mindfulness and cognitive-behavioral techniques. Clients are encouraged to practice mindfulness exercises regularly and utilize cognitive-behavioral strategies to address emotional and behavioral challenges. Activities in this phase include breathing exercises, meditation, applying cognitive restructuring techniques in everyday situations, and practicing behavioral skills.
5	Evaluation	After implementing the techniques over a specific period, the counselor and client collaboratively evaluate the progress made and assess the effectiveness of the applied techniques. Clients provide feedback on their experiences, and the counselor adjusts the strategies as needed. Activities include discussing perceived changes, assessing the impact of mindfulness and cognitive-behavioral techniques, and modifying the counseling plan to meet the client's needs.
6	Sustainable long-term planning	In the final stage, the counselor assists the client in designing a maintenance plan to ensure that mindfulness and cognitive- behavioral techniques are consistently applied in daily life. Clients are equipped with tools and strategies to overcome future challenges and sustain personal growth. Activities at this stage include developing long-term plans, learning new skills, and creating strategies to maintain balance and harmony in personal and social life.

The Mindfulness Cognitive Behavioral Harmony Counseling Model integrates three core aspects: mindfulness, the cognitive-behavioral approach, and the concept of harmony derived from the local wisdom of Tri

Hita Karana. This model is designed to enhance comfort and happiness in the learning process by merging principles of mindfulness, cognitive-behavioral techniques, and harmony values.

Mindfulness serves as the foundational element of this model, teaching individuals to be fully present in the current moment. Mindfulness techniques help clients manage stress and emotions more adaptively, enhance self-awareness, and improve interpersonal relationships. These practices include breathing meditation, body sensation observation, and nonjudgmental thought monitoring, all of which can reduce anxiety and improve focus.

The Cognitive-Behavioral Approach provides practical tools for transforming unproductive thought patterns and behaviors. This model employs cognitive-behavioral techniques to help clients identify and modify negative thoughts or cognitive distortions that influence their emotions and behaviors. By applying methods such as cognitive restructuring and behavioral skill training, clients can develop more effective coping strategies and enhance their mental well-being.

The Harmony Concept rooted in the local wisdom of Tri Hita Karana, encompassing harmony with God (Parahyangan), harmony with others (Pawongan), and harmony with nature (Palemahan), forms the framework underlying the application of mindfulness and cognitive-behavioral techniques. Harmony with God emphasizes the importance of spiritual connection and gratitude, harmony with others underscores healthy relationships and positive communication, while harmony with nature teaches the importance of maintaining balance and relationships with the environment. Integrating these values into counseling creates a holistic and cohesive approach to improving well-being.

3.2. Validity Test Results

Model validity testing was carried out through expert tests (judges). Two experts in guidance and counseling major were invited to study the design-build model that has been composed. The aspects that are studied include: model usefulness, model feasibility, and model accuracy. The instrument used for the review consists of 17 items with 2 response alternatives: relevant and irrelevant. The results of the review by both experts were analyzed using the validity test model developed by Gregory [67] with the formula:

$$VC=A/A+B+C+D \quad ...(2)$$

Where CV is the content validity coefficient, A is the number of items deemed relevant by both experts, while B and C are the number of items responded to differently by both experts, one expert stated they are relevant while the other stated them irrelevant. Whereas D is the item that was responded to as irrelevant by both experts. The analysis results show that all items were deemed relevant by both experts. Thus, CV=A/A+B+C+D becomes CV = 17/17+0+0+0 = 1. With the decision-making criteria that if CV > 0.8 is valid and others are not valid, then the content validity of the Mindfulness Cognitive Behavioral-Harmony counseling model is categorized.

3.3. Model Practicality Test Results

The practicality test of the Mindfulness Cognitive Behavioral Harmony model involves 9 guidance and counseling teachers. The guidance and counseling teachers are the teachers from each district/city in Bali that implement counseling to test the effectiveness of the counseling model Mindfulness Cognitive Behavioral Harmony for increasing learning comfort and happiness. Before conducting counseling, the guidance and counseling teachers were trained to align their counseling skills with the Mindfulness Cognitive Behavioral Harmony counseling model. After the training, they were requested to evaluate the practicality of the model using a questionnaire consisting of 4 items. Ach item measures the alignment of the statement with the practicality of the assessed counseling model. Item 1 measures the ease of understanding the model, item 2 measures the ease of preparing counseling with the relevant model, item 3 measures the ease of conducting counseling, and item 4 measures the ease of evaluating the success of implementing the counseling model. These items are accompanied by response alternatives: very appropriate (with a score of 4), appropriate (with a score of 3), not appropriate (with a score of 2), and very inappropriate (with a score of 1). The assessment results are analyzed using the formula:

$$P = M/Smi \quad ...(3)$$

Where P is the percentage, M is the average score of all respondents, and SMi is the ideal maximum score. The ideal maximum score is the maximum score of each item multiplied by the number of items. Because the number of items is 4 and the maximum score for each item is also 4, the SMi becomes 16. The analysis results found P = 98.6. The calculation results were converted into criteria as presented in Table 9.

Table 9. Practicality Test Criteria

Percentage	Category Practicality
90 - 100	Very Practical
80 - 89	Practical

70-79	Less practical
0 - 69	Not practical

Based on the calculation of the result 98.6 practicality and criteria practicality presented in Table 9, can concluded that the practicality of the counseling model Mindfulness Cognitive Behavioral Harmony is categorized as very practical.

3.4. Hypothesis Test Results

This section presents the results of Hypothesis 1, which examines the effect of the Mindfulness Cognitive Behavioral Harmony counseling model on students' learning comfort. A t-test analysis was conducted to compare the post-test scores of the experimental and control groups. The results presented in Table 10 provide statistical evidence regarding the effectiveness of the intervention in enhancing students' learning comfort.

Table 10. t-Test Results for Learning Comfort (Post-Test)

Group	Mean Score	t-Value	p-Value
Experimental Group	123.9	2.810	0.005
Control Group	117.8	2.810	0.005

Based on Table 10 above, Hypothesis 1 posits that the Mindfulness Cognitive Behavioral Harmony counseling model increases students' learning comfort. The t-test results for the post-test show that the experimental group had a mean score of 123.9, while the control group had a mean score of 117.8. Before analyzing the post-test differences, a pretest equivalence test was conducted, revealing no significant difference between the two groups ($t = -0.521$, $p = 0.415$), confirming that both groups had similar learning comfort levels prior to the intervention. Following the treatment, the post-test results showed a significant difference between the experimental and control groups ($t = 2.810$, $p = 0.005$). This indicates that the experimental group experienced a higher level of learning comfort after receiving the Mindfulness Cognitive Behavioral Harmony counseling model, compared to the control group. Thus, Hypothesis 1 is supported, confirming that the counseling model is effective in enhancing students' learning comfort.

Following the analysis of learning comfort, this section examines the results of Hypothesis 2, which investigates the effect of the Mindfulness Cognitive Behavioral Harmony counseling model on students' happiness. A t-test analysis was conducted to compare post-test scores between the experimental and control groups. The results presented in Table 11 provide empirical evidence regarding the effectiveness of the intervention in enhancing students' happiness levels.

Table 11. t-Test Results for Happiness Study (Post-Test)

Group	Mean Score	t-Value	p-Value
Experimental Group	163.0872	4.745	0.000
Control Group	156.1978	4.745	0.000

Based on Table 11 above, Hypothesis 2 posits that the Mindfulness Cognitive Behavioral Harmony counseling model effectively increases students' happiness. The pretest equivalence test for happiness study between the experimental and control groups showed no significant difference ($t = 0.845$, $p = 0.399$), indicating that both groups had similar happiness levels before the intervention. After the treatment, a t-test was performed on the post-test results, revealing a significant difference between the experimental and control groups ($t = 4.745$, $p = 0.000$). The experimental group had an average score of 163.0872, compared to the control group's average score of 156.1978. This indicates that the experimental group, which received the Mindfulness Cognitive Behavioral Harmony counseling model, experienced a significantly higher level of happiness after the treatment. Therefore, Hypothesis 2 is supported, confirming that the counseling model effectively increases happiness in elementary school students.

Hypothesis 3 which was tested in the present study is that the counseling model Mindfulness Cognitive Behavioral Harmony is effective in simultaneously increasing learning comfort and learning happiness of elementary students. This hypothesis was tested using the multivariate analysis of variance (MANOVA) statistical test. The results of the data analysis using Manova found an F value of 4.974 with a significance level of 0.027. The results of this analysis indicate that the comfort of learning and the happiness of learning between the experimental group and the control group after the treatment differ significantly. The conclusion that can be drawn from the results of this data analysis is that Hypothesis 3, which states that the Mindfulness Cognitive Behavioral Harmony counseling model effectively simultaneously improves the learning comfort and happiness of elementary school students, has been empirically proven.

3.5. Contribution of Digital Elements to Learning Outcomes

The integration of digital elements in the MCBH counseling model provides students with continuous, accessible support that enhances both their emotional regulation and overall learning experience. Digital tools such as mobile applications and online platforms are essential in providing flexible, on-demand access to mindfulness exercises and CBT strategies, facilitating sustained engagement and emotional well-being. These digital components allow students to practice techniques at their own pace and convenience, making them more likely to engage consistently and improve their emotional regulation. In alignment with current research on digital learning tools, studies have shown that technology enhances both the reach and effectiveness of psychological interventions. For instance, Cuijpers et al. [58] highlighted that technology can increase accessibility to mental health resources, offering a scalable solution for students who may not otherwise have access to traditional counseling services. Similarly, Zeidan et al. [55] found that mindfulness-based interventions, when combined with digital tools, are more effective in reducing anxiety and enhancing emotional well-being compared to traditional methods. These findings are consistent with the objectives of the MCBH model, which aims to integrate mindfulness, CBT, and local cultural wisdom with technology to provide accessible, sustainable support to students. The following table provides a more detailed look at how the digital elements of the MCBH model contribute to students' emotional regulation, learning comfort, and happiness.

Table 10. Contribution of Digital Elements to the MCBH Model

Digital Element	Contribution to Learning Outcomes	Impact on Students
Mobile Application for Mindfulness	Provides on-demand access to mindfulness exercises such as breathing meditation and body scanning, allowing students to practice anytime, anywhere.	Encourages consistent practice of stress management techniques, leading to improved emotional regulation and focus. Studies by Bamber et al. [43] indicate that frequent mindfulness practice reduces anxiety and enhances well-being.
Digital CBT Tools (Online Platforms)	Delivers cognitive-behavioral strategies, including cognitive restructuring and journaling, through mobile apps or online portals. This offers flexibility for students to access tools at their convenience.	Helps students identify and alter negative thought patterns, improving their emotional regulation and coping strategies. Ibrahim et al. [42] demonstrated that CBT is effective in improving emotional resilience in students when delivered digitally.
Real-Time Progress Tracking	Tracks engagement with mindfulness and CBT exercises, providing immediate feedback on emotional progress.	Enhances motivation and ensures that students are aware of their emotional growth. Research by Gkintoni et al. [39] supports that real-time tracking increases engagement and motivation, leading to better emotional outcomes.
Online Reflection Exercises	Facilitates reflection on Tri Hita Karana values (harmony with God, others, and nature) through digital journaling or video prompts.	Encourages deeper emotional and social reflection, supporting emotional well-being and reinforcing positive relationships. Studies by Wirata [20] indicate that cultural reflection improves overall emotional health.
Digital Support Communities	Enables peer support via digital platforms, where students can discuss their experiences with mindfulness and CBT techniques.	Promotes a sense of belonging, enhancing social well-being and overall happiness. Research by Pynnönen et al. [64] highlights that digital support communities contribute to emotional resilience by fostering connections.

As shown in the table, the digital components of the MCBH model provide students with accessible tools for emotional regulation and mindfulness practice, allowing them to engage flexibly and consistently with the material. The digital platforms also support real-time monitoring and feedback, which has been shown in studies to increase engagement and improve emotional well-being [70], [74], [75]. These findings support the notion that technology-enhanced interventions can be more effective than traditional methods by providing students with consistent access to emotional support and promoting sustained engagement.

Additionally, studies by Cuijpers et al. [55] and Zeidan et al. [58] have demonstrated the value of technology in facilitating continuous psychological support. The integration of mindfulness and CBT techniques with digital platforms enhances accessibility and engagement, ensuring that students receive timely emotional support, particularly in managing academic stress and enhancing their happiness.

This study develops the MCBH counseling model that integrates digital technology to enhance students' learning comfort and happiness in educational contexts. The key findings from this study demonstrate that this model is effective in improving students' emotional regulation, learning comfort, and happiness, with the

integration of technology supporting the implementation of mindfulness techniques and CBT. The inclusion of digital platforms in this model empowers students to manage academic stress and improves their overall well-being. These findings align with global research that shows technology can expand access to effective psychological interventions, offer continuous support, and increase student engagement in the learning process .

At the international level, recent studies support the use of mindfulness and CBT enhanced with technology to promote students' emotional well-being. For instance, Zeidan et al. [70] demonstrated that mindfulness-based interventions are effective in reducing anxiety and improving mental well-being, while Pynnönen et al. [76] emphasized how technology can accelerate changes in student engagement through technology-based motivational counseling. This reinforces the approach we have developed, which not only incorporates traditional counseling techniques but also utilizes technology to provide more sustainable and accessible support.

In comparison to existing educational technology research, this model enriches practices by addressing emotional well-being within the educational environment. Unlike many existing digital tools in education that primarily focus on cognitive skills, our model emphasizes emotional regulation and stress management, which are equally critical to students' learning success. The integration of mindfulness and CBT with technology provides an innovative approach to fostering positive emotional states, not just cognitive skills, in students. This integration aligns with the broader trend in educational technology, which increasingly recognizes the role of emotional support in enhancing student engagement and learning outcomes.

In Indonesia, while several studies have integrated CBT and mindfulness, few have combined these approaches with technology within educational counseling. Nwadi et al. [27], Ibrahim et al. [77], and Zhu et al. [78] have highlighted the effectiveness of CBT in reducing academic anxiety and improving students' emotional well-being. However, these studies have not extensively explored the role of digital platforms in enhancing the reach and sustainability of these interventions. Our study fills this gap by integrating technology to provide students with consistent, accessible support while optimizing emotional learning through mobile applications and digital platforms. This contribution highlights the potential of educational technology in delivering continuous emotional support to students, which is crucial in the context of modern educational challenges.

From a theoretical perspective, this study draws on three foundational theories that contribute to the development of the MCBH model. First, MBSR, developed by Kabat-Zinn [23], serves as the core framework for integrating mindfulness in counseling, enhancing emotional regulation, and reducing stress [31], [79]. Second, CBT, which focuses on the relationship between thoughts, feelings, and behaviors, is used to identify and alter negative thought patterns affecting students' emotional well-being . Third, Tri Hita Karana, a traditional Balinese philosophy that emphasizes harmony with God, others, and nature, enriches this model with local cultural values that support students' emotional and social well-being. The combination of these three theories in a technology-based counseling model brings a new dimension to counseling approaches in educational settings, offering a holistic solution that integrates both psychological and cultural perspectives.

The pedagogical implications of these findings are significant for future education. The use of technology to enhance mindfulness and CBT counseling offers the potential to create more inclusive, emotionally supportive learning environments. Digital tools enable students to access these techniques anytime, anywhere, and track their progress in real time. Cuijpers et al. [75] and Zeidan et al. [70], Alhasani [80], and Ni et al. [81] have demonstrated that technology can improve the effectiveness of therapy, and we hope this model can be widely adopted in educational settings to help students manage academic stress and emotional challenges. In terms of policy, this approach also holds important implications. The integration of technology into education and counseling not only alleviates academic pressures but also provides long-term solutions to improve students' emotional well-being. This aligns with global education guidelines that encourage the introduction of digital technologies in education to support inclusive and sustainable learning environments [82]-[85]. However, for successful implementation, policies supporting teacher training in digital tools and adequate infrastructure are essential.

The contribution of this study lies in its novelty, which introduces the integration of Mindfulness, CBT, and Tri Hita Karana within a technology-based counseling model. While prior research focused on mindfulness or CBT individually, this study uniquely combines these elements in the educational context, providing a holistic approach. Additionally, the use of technology to offer continuous emotional support is an innovative solution to modern educational challenges, where technology plays a crucial role in improving accessibility and the effectiveness of psychological interventions. However, this study also has limitations. One key limitation is the sample, which consists only of elementary school students in Bali. As such, the findings may not be generalizable to a broader population, particularly in regions with different educational and cultural contexts. Future research could expand the sample to include students from diverse regions in Indonesia and examine how this model can be adapted for higher education levels, such as middle or high school. Further studies could also explore how technology can be integrated into other counseling models and develop more advanced platforms to enhance engagement and the effectiveness of technology-based interventions.

4. CONCLUSION

This study developed and tested a digital counseling model that integrates MCBH with technological tools to enhance students' learning comfort and happiness. The findings demonstrate that the model effectively improves emotional regulation and well-being, with technology playing a key role in providing continuous, accessible support. By combining mindfulness, CBT, and local cultural wisdom (Tri Hita Karana) within a digital platform, this study contributes significantly to the development of educational technology and digital learning support systems. It shows that technology can be a powerful enabler of sustained emotional support and engagement for students, offering a scalable and effective solution to address academic stress and enhance well-being in educational contexts. The model contributes to the growing field of digital mental health interventions by offering a holistic approach that integrates psychological practices with cultural values, advancing both the theoretical and practical applications of digital tools in education. While the study is limited to elementary students in Bali, future research should explore the model's applicability in diverse cultural and educational contexts, including higher education settings, and investigate the long-term impacts on student well-being and academic achievement.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors declare that no artificial intelligence (AI) tools were used in the preparation, analysis, or writing of this manuscript. All aspects of the research, including data collection, interpretation, and manuscript preparation, were carried **out** entirely by the authors without the assistance of AI-based technologies.

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