

Development of the e-Personal Counseling (e-PC) Model to Reduce Students' Anxiety in Facing National Assessment

Khairul Amri¹, Mudjiran², Yeni Karneli³, Neviyarni S⁴, Fetriyeni⁵

¹Universitas Muhammadiyah Tapanuli Selatan

^{2,3,4,5}Universitas Negeri Padang

HOW TO CITE:

Khairul Amri, Mudjiran, Yeni Karneli, Neviyarni S, Fetriyeni (2026). Development of the e-Personal Counseling (e-PC) Model to Reduce Students' Anxiety in Facing National Assessment. International Journal of Special Education, 41(8s), 770-775

COPYRIGHT STATEMENT:

Copyright: © 2026 Authors.
Open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

ABSTRACT:

The implementation of digital-based National Assessment (AN) has introduced new challenges for students, particularly anxiety related to technological demands, academic performance, and assessment readiness. This study aimed to develop and evaluate an e-Personal Counseling (e-PC) model designed to reduce students' anxiety in facing digital-based AN. The study employed a Research and Development (R&D) approach using the ADDIE framework, consisting of Analysis, Design, Development, Implementation, and Evaluation stages. Participants included 240 students and guidance counselors at MAN 2 Padangsidimpuan. Data were collected through anxiety questionnaires, interviews, observations, and expert validation instruments. The needs analysis revealed that 50% of students experienced moderate anxiety, while 11% and 7% were categorized as having high and very high anxiety, respectively. The e-PC model was developed as an online counseling intervention consisting of Plan, Process, Result, and Evaluation phases. Expert validation indicated high validity, with Aiken's V values ranging from 0.816 to 0.945 across content, language, and design aspects. Practicality testing showed excellent results, with scores of 92.33% for the model book and 91.66% for the user guide. Effectiveness evaluation demonstrated improved self-confidence, emotional regulation, and reduced anxiety among students. These findings indicate that the e-PC model is a valid, practical, and effective counseling innovation for supporting students in digital assessment environments.

Keywords: e-personal counseling, digital-based national assessment, student anxiety, online counseling, ADDIE model, guidance and counseling.

Introduction

This study employed a Research and Development (R&D) approach using the ADDIE framework to develop the e-Personal Counseling (e-PC) model for reducing students' anxiety in facing digital-based National Assessment (AN). ADDIE is widely recognized as a systematic and flexible product development paradigm rather than merely an instructional

model (Branch, 2009, 2010). The framework consists of five stages—Analysis, Design, Development, Implementation, and Evaluation—which support the creation of effective learning and performance-support systems (Darmansyah, 2023). Its simplicity, adaptability, and strong theoretical foundation make it suitable for both conventional and digital environments, including application

development (Adnan & Ritzhaupt, 2018; Gawlik-Kobylińska, 2018; Yang & Chang, 2017). The development procedure adopted the ADDIE model adapted by Mudjiran (2019).

The study involved 240 students from MAN 2 Padangsidempuan. The needs analysis revealed that students' anxiety toward digital-based AN was predominantly in the moderate category (50%), followed by low (30%), high (11%), and very high (7%) levels. Anxiety was particularly associated with biological factors (54.16%), social status (42.50%), and cultural background (43.04%), indicating the need for a structured counseling intervention. Data were collected through three instruments: a structured anxiety questionnaire, interview guidelines for school counselors, and observation sheets. The questionnaire measured anxiety dimensions related to gender, biological factors, age, social status, economic status, and cultural background. Interviews explored counselors' strategies, challenges, and available resources, while observations documented students' participation and behavioral responses during counseling activities. The development process began with analyzing students' anxiety profiles and existing counseling practices. Subsequently, the e-PC model was designed by integrating counseling syntax, social systems, reaction principles, support systems, instructional impacts, and nurturant effects. The development stage produced the e-PC application, model handbook, and user guide, followed by implementation through field trials. Finally, evaluation was conducted using immediate, short-term, and long-term assessments. Quantitative data were analyzed using descriptive statistics, validity and reliability testing, and paired-sample t-tests, while qualitative data were examined through thematic analysis and triangulation to ensure the credibility and comprehensiveness of findings. Based on the background of the problem, various issues can be identified through the following research questions:

(1) How do students' needs for the development of the e-Personal Counseling (e-PC) model to reduce students' anxiety in facing digital-based AN (RQ1)?

(2) What is the process and validity of developing the e-Personal Counseling (e-PC) model to reduce students' anxiety in facing digital-based AN (RQ2)?

(3) What is the process and practicality of developing the e-Personal Counseling (e-PC) model to reduce students' anxiety in facing digital-based AN (RQ3)?

(4) What is the process and effectiveness of developing the e-Personal Counseling (e-PC) model to reduce students' anxiety in facing digital-based AN (RQ4)?

Methodology

This study employed a Research and Development (R&D) approach using the ADDIE framework, which consists of Analysis, Design, Development, Implementation, and Evaluation stages (Branch, 2009, 2010). ADDIE is recognized as a systematic and flexible product development paradigm that supports both conventional and digital learning environments (Adnan & Ritzhaupt, 2018; Gawlik-Kobylińska, 2018; Yang & Chang, 2017). The model was adapted from Mudjiran (2019) to develop the e-Personal Counseling (e-PC) model for reducing students' anxiety toward digital-based National Assessment (AN). The study involved 240 students, of whom 120 participated in the development and implementation stages. Data were collected using anxiety questionnaires, interviews with school counselors, and observation sheets. Findings from the analysis phase indicated that students' anxiety was predominantly at the moderate level (50%), followed by low (30%), high (11%), and very high (7%). Quantitative data were analyzed using descriptive statistics, validity and reliability testing, and paired-sample t-tests, while qualitative data were examined through thematic analysis and triangulation to ensure credibility and comprehensiveness.

Results

1. Students' Needs for Developing the e-Personal Counseling (e-PC) Model (RQ1)

The needs analysis involved 240 students and guidance counselors (BK teachers) at MAN 2 Padangsidempuan. The findings revealed that

students generally experienced a moderate level of anxiety in facing digital-based National Assessment (AN), with 50% classified as moderate, 11% high, and 7% very high. Anxiety was particularly evident in dimensions related to biological factors (54.16%), social status (42.50%), and cultural background (43.04%).

Item-level analysis showed that 76% of students reported feeling nervous and anxious when thinking about AN, 75% avoided discussions related to AN, and 73% expressed concerns regarding their readiness to participate in the assessment. Furthermore, interviews with BK teachers indicated that existing counseling services were still conducted conventionally, lacked structured intervention models, and had not utilized digital technology to support counseling activities. The findings demonstrate a strong need for a technology-assisted counseling model capable of reducing students' anxiety, improving accessibility to counseling services, and supporting counselors in managing large student populations. Therefore, the development of the e-Personal Counseling (e-PC) model was considered necessary and relevant to current educational challenges.

2. Development Process and Validity of the e-PC Model (RQ2)

The e-PC model was developed using the ADDIE framework consisting of Analysis, Design, Development, Implementation, and Evaluation stages. The model integrates individual counseling procedures with an online platform designed to facilitate counseling services before, during, and after counseling sessions. The resulting model consists of four main phases: Plan, Process, Result, and Evaluation. The Process phase adopts five counseling stages: introduction, exploration, interpretation, intervention, and assessment. Supporting components include social systems, reaction principles, support systems, instructional impacts, and nurturant impacts. Expert validation was conducted by specialists in counseling, language, and educational design. The results indicated a very high level of validity. The counseling-content validation of the model book

achieved an Aiken's V index of 0.920 (ICC = 0.792), language validation reached 0.912 (ICC = 0.799), and design validation reached 0.816 (ICC = 0.754). Similarly, the guidebook obtained Aiken's V scores of 0.945 for counseling content, 0.904 for language, and 0.820 for design. These results indicate that the e-PC model possesses strong content validity, linguistic appropriateness, and design feasibility for implementation in school counseling settings.

3. Practicality of the e-PC Model (RQ3)

The practicality of the e-PC model was evaluated by BK teachers through field testing of the model book and user guide. The results demonstrated that the model was highly practical and easy to implement in counseling services. The model book obtained a mean practicality score of 4.57 out of 5, corresponding to 92.33%, while the guidebook achieved a mean score of 4.58 (91.66%). Teachers reported that the model was easy to understand, applicable in individual counseling sessions, capable of creating positive emotional interactions, and useful for reducing students' anxiety. Feedback from Focus Group Discussions (FGDs) further confirmed that the model procedures were clear, systematic, and compatible with school counseling practices. Participants also emphasized that the online format increased flexibility and accessibility of counseling services. Therefore, the e-PC model can be categorized as highly practical for school implementation.

4. Effectiveness of the e-PC Model in Reducing Students' Anxiety (RQ4)

The effectiveness evaluation showed that the e-PC model contributed positively to reducing students' anxiety related to digital-based AN. Counselors reported that students became more confident, demonstrated improved emotional regulation, and showed reduced nervousness toward assessment activities after participating in e-PC sessions.

The effectiveness was supported by the model's structured counseling stages, continuous evaluation mechanisms (immediate, short-term, and long-term assessments), and online accessibility, which enabled students to seek

counseling support more comfortably. In addition, teachers perceived that the model improved students' understanding of AN procedures and reduced maladaptive responses such as avoidance, excessive worry, and low self-confidence.

Overall, the findings indicate that the e-PC model is valid, practical, and effective as an innovative counseling intervention for reducing students' anxiety in facing digital-based National Assessments.

Discussion

1. Students' Needs for the Development of the e-PC Model

The findings indicate that students experienced moderate to high levels of anxiety when facing digital-based National Assessment (AN). Although most students were classified within the moderate category, a substantial proportion reported symptoms such as nervousness, avoidance behaviors, low self-confidence, and excessive worry. These findings suggest that students are not only challenged by the assessment itself but also by the technological demands associated with digital-based testing. This result supports the argument that academic anxiety emerges when students perceive a mismatch between environmental demands and their perceived coping abilities (Spielberger, 1983). The high prevalence of anxiety-related symptoms identified in this study is consistent with previous findings showing that technology-mediated assessments may intensify students' psychological pressure, particularly among those with limited digital readiness and low academic self-efficacy (Putwain & Daly, 2014). Furthermore, the interviews with guidance counselors revealed that existing counseling services remain largely conventional and reactive, limiting their ability to provide timely and continuous support for students. This finding aligns with contemporary counseling literature emphasizing the need for digital counseling innovations capable of increasing accessibility, flexibility, and responsiveness to students' socio-emotional needs (Richards & Viganó, 2013).

The needs analysis therefore demonstrates that the development of the e-Personal Counseling (e-PC) model is not merely a technological adaptation but a strategic response to the changing nature of educational assessment and student mental health support. The model addresses both counseling accessibility and anxiety reduction, making it highly relevant within the context of digital transformation in education.

2. Development and Validity of the e-PC Model

The e-PC model was developed using the ADDIE framework and individual counseling theory, integrating conventional counseling procedures with digital delivery mechanisms. Its structure, which includes planning, counseling processes, reporting, and evaluation, reflects a systematic instructional design approach (Branch, 2009). High validity scores from counseling, language, and design experts indicate that the model possesses strong conceptual, linguistic, and visual quality. These findings support the view that effective counseling models should be theoretically grounded while meeting usability standards (Joyce et al., 2016). Furthermore, the results demonstrate that digital technology can enhance counseling accessibility and efficiency without compromising service quality, consistent with previous studies on technology-assisted counseling (Barak et al., 2008; Richards & Viganó, 2013).

3. Practicality of the e-PC Model

The practicality evaluation showed that guidance counselors perceived the e-PC model as highly practical, easy to use, and applicable in counseling services. Its structured procedures and digital accessibility help address limited counseling time and high counselor-to-student ratios. Unlike conventional face-to-face counseling, the e-PC model enables more flexible and efficient interactions, making it suitable for schools with large student populations. These findings are consistent with previous studies indicating that online counseling can reduce logistical barriers while maintaining effective counselor-client communication (Anthony & Nagel, 2010).

Furthermore, the digital environment promotes emotional comfort, confidentiality, and student participation, thereby enhancing both counseling accessibility and service effectiveness.

4. Effectiveness of the e-PC Model in Reducing Anxiety

The findings indicate that the e-PC model effectively reduces students' anxiety in facing digital-based National Assessment (AN). Students showed increased self-confidence, improved emotional regulation, and decreased avoidance behaviors after participating in counseling sessions. These outcomes support the cognitive-emotional adjustment perspective, which suggests that counseling helps individuals develop adaptive coping strategies for stressful situations (Lazarus & Folkman, 1984). The effectiveness of the model is further supported by its systematic counseling stages and continuous evaluation process, enabling sustained monitoring and intervention. Consistent with person-centered counseling principles, the e-PC model promotes self-awareness, emotional growth, and resilience (Corey, 2016). Continuous support also enhances long-term psychological adaptation and anxiety reduction (Gladding, 2018).

5. Implications of the Study

This study contributes both theoretically and practically to the field of school counseling. Theoretically, it extends the literature on technology-assisted counseling by demonstrating how established counseling principles can be integrated into a digital platform without compromising intervention quality. Practically, the study provides schools with a validated, practical, and effective counseling model that can be used to support students facing assessment-related anxiety. Given the increasing implementation of digital assessment systems

worldwide, counseling services must evolve accordingly. The e-PC model offers an evidence-based approach that enables counselors to deliver accessible, efficient, and student-centered support, thereby addressing emerging mental health challenges within contemporary educational contexts.

Conclusion

Based on the results and discussion, several key conclusions can be drawn. First, the electronic personal counseling (e-PC) model is needed as an innovative counseling service to reduce students' anxiety in facing digital-based national assessments. Second, the validity testing of the e-PC model demonstrated strong results, with an overall Aiken's index of 0.882 categorized as highly valid and an ICC value of 0.781 categorized as very good. Third, the practicality testing confirmed that the e-PC model is highly practical, easy to use, and effective in guiding counselors and students, with similarly strong validity and reliability scores. Finally, evaluation results showed that both the e-PC handbook and guidebook are proven to be valid, practical, and effective, thereby establishing the e-PC model as a reliable and impactful innovation for reducing student anxiety in digital assessment contexts.

Limitations and future research

The study acknowledges certain limitations. First, the model was designed specifically to address the problems faced by students in madrasah aliyah (MA) and was only implemented on a limited scale at MAN 2 Padangsidempuan. Therefore, broader implementation across multiple madrasah aliyah in districts and cities within North Sumatra, as well as in other regions beyond North Sumatra, is necessary to further test and validate the effectiveness of the E-PC model in reducing student anxiety in digital-based national assessments on a wider scale.

References

- Adnan, N. H., & Ritzhaupt, A. D. (2018). Software engineering design principles applied to instructional design: What can we learn from our sister discipline? *TechTrends*, 62(1), 77–94. <https://doi.org/10.1007/s11528-017-0238-5>
- Amri, K., Mudjiran, & Karneli, Y. (2020). *WEB-based E-personal counseling (E-PC) model reduces anxiety in national examination*. Atlantis Press.

- Anthony, K., & Nagel, D. M. (2010). *Therapy online: A practical guide*. Sage Publications.
- Ardi, Z., Rido, M., & Putra, M. (2017). Ethics and legal issues in online counseling services: Counseling principles analysis. *Jurnal Psikologi Pendidikan & Konseling*, 3, 15–22.
- Barak, A., Hen, L., Boniel-Nissim, M., & Shapira, N. (2008). A comprehensive review and a meta-analysis of the effectiveness of internet-based psychotherapeutic interventions. *Journal of Technology in Human Services*, 26(2–4), 109–160.
- Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer.
- Branch, R. M. (2010). *Instructional design: The ADDIE approach*. Springer.
- Corey, G. (2016). *Theory and practice of counseling and psychotherapy* (10th ed.). Cengage Learning.
- Darmansyah. (2023). *Model-model desain instruksional*. Raja Grafindo Persada.
- Gawlik-Kobylińska, M. (2018). The ADDIE model in educational and instructional design.
- Geldard, K., & Geldard, D. (2011). *Keterampilan praktik konseling: Pendekatan integratif*. Pustaka Pelajar.
- Gladding, S. T. (2018). *Counseling: A comprehensive profession* (8th ed.). Pearson.
- Ifdil. (2013). *Konseling online sebagai salah satu bentuk pelayanan e-konseling*.
- John McLeod. (2003). *Pengantar konseling: Teori dan studi kasus*. Kencana.
- Joyce, B., Weil, M., & Calhoun, E. (2016). *Models of teaching* (9th ed.). Pearson Education.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company.
- Li, P., Lau, R. A. M., Jaladin, R. A. M., & Abdullah, H. S. (2013). Understanding the two sides of online counseling and their ethical and legal ramifications. *Procedia-Social and Behavioral Sciences*, 103, 1243–1251.
- Mudjiran. (2019). *Model konseling dan pengembangan layanan bimbingan dan konseling*. Padang: UNP Press.
- Prayitno, & Amti, E. (2013). *Dasar-dasar bimbingan dan konseling*. Rineka Cipta.
- Putwain, D. W., & Daly, A. L. (2014). Test anxiety prevalence and gender differences in a sample of English secondary school students. *Educational Studies*, 40(5), 554–570. <https://doi.org/10.1080/03055698.2014.953914>
- Richards, D., & Viganó, N. (2013). Online counseling: A narrative and critical review of the literature. *Journal of Clinical Psychology*, 69(9), 994–1011.
- Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory (STAI)*. Consulting Psychologists Press.
- Sukardi, D. K., & Kusmawati, D. N. (2008). *Proses bimbingan dan konseling di sekolah*. Rineka Cipta.
- Yang, H. H., & Chang, B. (2017). Development and evaluation of educational applications using the ADDIE model. *Educational Technology Research and Development*, 65(4), 1123–1141.
- Yuli Permatasari, Neviyarni, & Firman. (2021). Inovasi program layanan BK digital. *Jurnal Al-Taujih*, 7(1), 38–44.

7. Acknowledgements (Optional)

The author sincerely acknowledges the valuable support and guidance provided by the academic supervisors, colleagues, and school counselors who contributed to the completion of this research.

8. Author Declaration

All sources of information, data, and references used in this study have been properly acknowledged. The author further confirms that there is no conflict of interest in the execution and reporting of this research.