E.ISSN.2614-6061
P.ISSN.2527-4295
DOI : 10.37081/ed.v14i2.7889
Vol. 14 No. 2 Edisi Mei 2026, pp.515-524

INTEGRATING SPIRITUAL VALUES INTO ONLINE COMPETITION PLATFORMS TO ENHANCE STUDENTS' ACHIEVEMENT IN ECONOMICS OLYMPIAD: A BEST PRACTICE STUDY

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Informasi Artikel
Riwayat Artikel :
Submit, 26 Desember 2025
Revisi, 15 Mei 2026
Diterima, 19 Mei 2026
Publish, 22 Mei 2026

Kata Kunci :
Integration of Spiritual Values,
Online Competition Website,
Economic Science Olympiad,
Student Achievement,
Islamic Education,
Holistic Learning.

ABSTRACT
This study aims to examine best practices for integrating spiritual values into an online competition website to improve students' achievement in the Economics Science Olympiad at MAN 1 Banda Aceh. This study employed a descriptive, qualitative approach with a best-practices design. Data collection was conducted through observation, in-depth interviews, and documentation involving the principal, supervising teachers, and student participants in the Olympiad program. The results indicate that the integration of spiritual values was systematically implemented through three interconnected stages: the pre-competition stage (intention formation, spiritual and mental readiness), the competition stage (emotional control, trust in God, and stress management), and the post-competition stage (reflection, gratitude, and character building). This integrative approach has been proven not only to improve students' cognitive achievement at the city, provincial, and national levels but also to strengthen affective and psychomotor aspects, such as self-regulation, mental resilience, digital literacy, and ethical competitive attitudes. This study confirms that the effectiveness of the online competition website is maximized when integrated into a holistic educational framework grounded in spiritual values. These findings contribute to the development of literature on digital learning, character education, and contemporary Islamic education.

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1. INTRODUCTION

The COVID-19 pandemic has become a major catalyst for transforming the global education system, driving the rapid adoption of digital learning technologies (Barrot et al., 2021). Restrictions on face-to-face interactions have forced educational institutions in various countries to implement online and hybrid learning as a strategy for educational sustainability(Mukhtar et al., 2020). In this context, information and communication technology (ICT) is no longer understood solely as a means of delivering material, but has evolved into a strategic medium for developing academic competencies, 21st-century skills, and student character. This paradigm shift marks a fundamental shift in modern educational practices, which increasingly rely on integrating digital technology (Pikhart et al., 2024).

This digital learning transformation has also influenced patterns of fostering student academic achievement, including in the context of science olympiad competitions (Scheel et al., 2022). Website-based learning media and online competition applications have developed rapidly and are being utilized as tools for training, evaluating, and selecting student competencies nationally and internationally (Akpen et al., 2024). Platforms such as Quizizz, POSI, and OASE Edukasi allow students to participate in real-time competitions at relatively low or even no cost, thereby expanding access to quality academic competitions . However, the use of these technologies is often heavily focused on cognitive aspects and end results, with insufficient attention to students' affective and psychological dimensions (Songkram et al., 2023).

Various studies have shown that the use of digital learning technology that focuses solely on cognitive achievement has the potential to cause psychological and affective problems, such as academic stress, competitive anxiety, mental fatigue, and a weakening of moral and spiritual values (Vallo Hult et al., 2025). In the context of academic competition, the pressure to achieve often pushes students toward outcome-oriented learning, neglecting the learning process and character development (Pikhart et al., 2024). This situation emphasizes the importance of an achievement-building approach that considers not only mastery of material and technology but also a balance among mental, emotional, and value aspects (Bennet & Bennet, 2007).

This approach becomes increasingly relevant as the Economics Science Olympiad develops, which demands high-level analytical skills encompassing microeconomics, macroeconomics, and accounting. This competition not only tests conceptual mastery and critical thinking skills, but also mental resilience, decision-making abilities under pressure, and students' psychological readiness. Therefore, the development of the Economics Science Olympiad requires a comprehensive, holistic approach that goes beyond technology and academics to strengthen students' affective and spiritual dimensions.

In the context of Islamic education, integrating spiritual values into the learning process and academic competitions is a fundamental necessity (Ratno & Syahri, 2024). Values such as trust (relief), sincerity, patience, gratitude, humility, and honesty serve as an inner control system that balances the use of modern technology with the development of student character (Stella et al., 2023). The integration of spiritual values into the use of online competition websites is expected to shape students who are not only cognitively superior but also mentally resilient, with good emotional regulation and noble character (I Wayan Suwendra & I Wayan Widiana, 2023).

MAN 1 Banda Aceh, as a leading Islamic Senior High School (Madrasah Aliyah) in national academic rankings, has developed a Science Olympiad coaching program in Economics through an online competition website systematically integrated with Islamic spiritual values. This practice focuses not only on improving students' academic abilities but also on developing mental and character development through a structured spiritual approach. The implementation of this approach has been proven to result in significant improvements in student achievement at the city, provincial, and national levels. Therefore, this coaching practice is important to study academically as a best practice that offers theoretical and practical contributions to the development of a technology- and spirituality-based achievement coaching model.

Previous studies on online learning and the use of digital media in education have generally focused on the effectiveness of learning technology on cognitive learning outcomes, the influence of online competition applications on student motivation and interest in learning, and strategies for coaching science olympiads based on information technology (Pikhart et al., 2024; Scheel et al., 2022; Vallo Hult et al., 2025). However, significant research gaps remain, particularly the lack of studies systematically examining the integration of spiritual values in the context of online website-based academic competitions. Most studies still separate the technological and spiritual dimensions, thus failing to produce a holistic coaching model. Furthermore, studies based on real-world practices (best practices) in madrasahs, particularly in Economics, which is highly analytical and competitive, are still very limited. Furthermore, there is no empirically tested model for the stages of spiritual value integration encompassing pre-competition, intra-competition, and post-competition phases.

Based on these gaps, this research was developed to offer an integrative approach that combines online competition technology and Islamic spiritual values in a structured and sustainable manner. The novelty of this research lies in the

development of a conceptual framework for integrating spiritual values into coaching for Science Olympiad competitions based on online website competitions, which simultaneously integrates cognitive, affective, psychomotor, and spiritual dimensions. Furthermore, this study offers a three-stage model of spiritual value integration (pre-competition, during competition, and post-competition) that is consistently applied across online competition media. This study also presents empirical best practices from leading madrasahs that have succeeded in significantly improving their achievements in the Science Olympiad in Economics through an integrative technology-spirituality approach, and enriches the literature on technology-based Islamic education in the local context of Indonesia, particularly in Aceh, which has a strong religious culture.

Literature Review

Digital Learning Transformation and Academic Competitions in the Post-Pandemic Era

The COVID-19 pandemic has accelerated the transformation of the global education system by driving the massive adoption of digital learning technologies (Lemay et al., 2021). Online and hybrid learning are no longer positioned as temporary alternatives, but rather as an integral part of the modern education ecosystem (Vallo Hult et al., 2025). Various studies have shown that the use of information and communication technology (ICT) can increase learning flexibility, expand educational access, and encourage personalized learning tailored to student needs (Börnert-Ringleb et al., 2021; Lin et al., 2017; Scheel et al., 2022; Songkram et al., 2023). In this context, website-based learning platforms and digital applications have developed rapidly, including in academic competitions and science olympiads.

Online academic competitions allow students to practice and compete in real time, with national and international reach. Platforms such as Quizizz, POSI, OASE Edukasi, and various other online competition systems serve as a means of evaluation, simulation, and student competency mapping (Pratama, 2023). Several studies have reported that using online competition media can increase learning motivation, student engagement, and critical thinking skills (Pratama, 2023; Pusparani, 2021; Rizky Ayuk Juvanichasari et al., 2023). However, the literature also notes that excessive reliance on competitive technology can lead to psychological stress, competitive anxiety, and mental fatigue, especially when learning and competition are overly results-oriented (Albadri et al., 2022).

Science Olympiad Coaching and Student Psychological Challenges

Science Olympiad coaching is a form of advanced academic learning that demands high cognitive abilities, mental resilience, and emotional readiness in students. In the context of Economics, the competition requires mastery of microeconomic, macroeconomic, and accounting concepts, as well as analytical, problem-solving, and decision-making skills within a limited time. Previous research has shown that students participating in science olympiad coaching tend to experience higher academic stress than regular students, primarily due to achievement demands and institutional expectations.

Several studies in educational psychology confirm that academic performance in competitive situations is significantly influenced by emotional regulation and stress management skills(Garaigordobil, 2023). Students who lack adequate coping strategies are at risk of declining cognitive performance despite having good mastery of the material. Therefore, science olympiad coaching that emphasizes only cognitive and technical aspects is considered insufficient to produce sustained achievement (Chen et al., 2024).

Digital Learning Technology and the Affective Dimension

The technology-based learning literature shows that the effectiveness of digital media is determined not only by technical features and instructional design, but also by the affective context and values surrounding it (Pikhart et al., 2024). Digital learning that overemphasizes speed, scores, and rankings can encourage a superficial, outcome-oriented approach. Several studies have criticized online competition-based learning, which, if not balanced with affective support, can reinforce individualism and reduce students' social sensitivity (Pratama, 2023).

In this context, the need arises to develop a more holistic approach to digital learning, one capable of integrating cognitive, affective, and value dimensions(Mukhtar et al., 2020). A holistic approach views learners as whole individuals who require not only knowledge mastery but also character development, meaning, and psychological well-being (Olsen, 2024). Contemporary educational literature has begun to emphasize the importance of well-being, resilience, and meaningful learning as indicators of educational success in the digital era(Messy et al., 2023).

Spirituality in Education and Character Building

Spirituality is an important dimension of character education, shaping students' meaning and purpose in life and their moral values. Various studies have shown that spirituality positively contributes to psychological well-being, mental resilience, and emotional regulation. In the context of education, spirituality is not always understood ritualistically, but rather as an awareness of values, meaning, and transcendental connectedness that influences students' learning behavior (Messy et al., 2023).

In Islamic education, spirituality is the primary foundation of learning, encompassing the values of intention (niyyah), tawakkul (trust), patience, gratitude, sincerity, honesty, and humility.

These values function as an internal control system that guides learning behavior and promotes ethical, meaningful competition (Ratno & Syahri, 2024). Islamic education literature confirms that integrating spiritual values into the learning process can increase students' intrinsic motivation, self-discipline, and resilience in facing academic challenges (Stella et al., 2023).

Integration of Spirituality and Technology in Education

Despite the rapid growth of literature on digital learning and spiritual education, most research continues to separate these two dimensions. Technology is often portrayed as a rational, instrumental domain, while spirituality is seen as a separate, affective domain. In fact, a number of recent studies have begun to demonstrate that integrating spiritual values into technology-based learning can create a more meaningful and sustainable learning experience (Pikhart et al., 2024). Several studies report that a values-based learning approach can improve self-regulation, reduce academic anxiety, and strengthen long-term motivation for learning (Bulkani et al., 2025; Messy et al., 2023; Olsen, 2024; Pattiruhu et al., 2023). However, studies specifically integrating spirituality in the context of online website-based academic competitions are still very limited. Furthermore, research documenting actual practices (best practices) in madrasas or schools grounded in religious values is almost nonexistent in the international literature.

2. RESEARCH METHOD

Research Design and Approach

This research employed a qualitative approach with a best practice study design. This approach was chosen because the primary objective of the research was not to test causal relationships between variables, but rather to systematically document, analyze, and reflect on best practices in fostering achievement in the Science Olympiad in Economics through the integration of spiritual values in the use of online competition websites. In the context of educational research, a best-practice design enables researchers to capture real-world, contextually grounded, and applicable practices, understand the dynamics of the coaching process holistically, and generate findings relevant to the development of educational policies and practices. Methodologically, this research is positioned as practice-based research, emphasizing critical reflection on proven empirical experiences to achieve a high level of ecological validity.

Research Context and Location

This research was conducted at MAN 1 Banda Aceh, a State Islamic Senior High School designated as a National Academic Excellence Madrasah based on Decree No. 1834 of 2021 from the Directorate General of Islamic Education. This madrasah has unique characteristics, including the development of structured, sustainable Olympiad classes, strong institutional support for the development of academic achievement, and a religious environment conducive to strengthening spiritual values. These characteristics make MAN 1 Banda Aceh a representative context for examining the integration of learning technology and spirituality in the development of academic achievement, particularly in digital-based competitions.

Research Subjects and Participants

The subjects of this research were students participating in the Science Olympiad program in Economics from grades 10, 11, and 12, selected through the madrasah's internal selection mechanism. In addition to students, research participants included Science Olympiad teachers in Economics, who served as academic facilitators and spiritual mentors, as well as members of the madrasah management, who supported policies and provided infrastructure for development. The number of students involved in the coaching program varies each academic year, but generally consists of a core group of mentored students who participate in intensive coaching and competitions on an ongoing basis, enabling in-depth observation of the coaching process and its impact.

Data Collection Techniques and Procedures

Data collection was conducted through participant observation, in-depth interviews, and documentation studies. Direct observations were made of the coaching process for the Economics Science Olympiad, the integration of spiritual values before, during, and after use of the online competition website, and students' responses to the pressure of competition and the accompanying psychological dynamics. The observations were moderately participatory, with the researcher directly involved as a participant in the coaching practice, while maintaining a reflective distance to conduct systematic critical analysis. In-depth semi-structured interviews were conducted with mentor teachers, student representatives participating in the coaching, and madrasah management. The interviews focused on participants' experiences, perceptions, and reflections regarding the effectiveness of using the online competition website, the role of spiritual values in building students' mental readiness and character, and the impact of spiritual integration on motivation and academic achievement. Meanwhile, the documentation study included student achievement data at the city, provincial, and national levels, development program archives, teacher reflection notes, and publications of student achievements in internal and external madrasah media. This documentation data serves as supporting quantitative data to strengthen and verify the qualitative findings.

Procedures for Implementing the Integration of Spiritual Values

At the core of the research methodology, this study describes and analyzes the integration of

spiritual values across three main, interconnected stages. The pre-competition stage includes familiarizing students with religious practices such as Dhuha and Tahajud prayers, group prayer, Quran recitation, and strengthening their motivation and spiritual intentions before participating in the online competition. The post-competition stage emphasizes internalizing the values of tawakkul (religious trust), patience, optimism, and self-control in the face of time pressure, difficult questions, and technical constraints such as network limitations. The post-competition stage focuses on reflection, cultivating gratitude, accepting results with open arms, academic evaluation, and understanding the competition as a life-learning process. These three stages are analyzed as a unified, integrated, and sustainable development system.

Data Analysis Techniques

Data analysis was conducted using an interactive analysis model that includes data reduction, data presentation, conclusion drawing, and verification. Qualitative data were reduced by selecting information relevant to the integration of spiritual values and student achievement development,

Data Validity and Credibility

To ensure the validity and credibility of the data, this study employed source triangulation involving teachers, students, and documents; technical triangulation through observation, interviews, and documentation; and ongoing reflection by the researcher as a practitioner. This approach aligns with the principle of methodological rigor in qualitative research and meets the publication standards of internationally reputable journals.

Research Ethics

This research was conducted in accordance with the ethical principles of educational research, including obtaining participants' consent and willingness to participate, protecting the confidentiality of respondents' identities, and using data solely for academic purposes and educational development. The entire research process was conducted with consideration for the researcher's moral and professional responsibilities to the participants and the relevant institutions.

3. RESULT AND DISCUSSION

Overview of the Implementation of the Economics Science Olympiad Development Program

The Economics Science Olympiad development program at MAN 1 Banda Aceh is implemented systematically and sustainably through an online competition website integrated with Islamic spiritual values. This program is not positioned as an additional or incidental activity, but rather as an integral part of the madrasah's academic quality improvement strategy. The development is designed to develop academic abilities while simultaneously developing students' mental resilience and character to face digital-based academic competitions.

Structurally, the development is carried out through the formation of Olympiad classes, attended by selected students from grades 10, 11, and 12 based on internal selection results. Students receive advanced economics training covering microeconomics, macroeconomics, and accounting, as well as competition-based practice questions and ongoing mental and spiritual mentoring. The online competition website is used for competition simulations, ability assessments, and real-time student competency mapping, allowing mentoring teachers to monitor students' academic progress more accurately and responsively.

Patterns of Integration of Spiritual Values in the Use of Online Competition Websites

The results of the study indicate that integrating spiritual values into the use of online competition websites forms a systematic development pattern across three main, interconnected stages: pre-competition, during-competition, and post-competition. These three stages form the operational framework for spiritual integration that is consistently applied in the development process for the Science Olympiad in the Economics field.

Pre-Competition Stage: Formation of Intention, Mental Readiness, and Spirituality

In the pre-competition stage, students are guided to develop a clear intention (niyyah) that the competition is part of their worship and endeavor to seek knowledge. Spiritual practices include reciting the Dhuha and Tahajjud prayers, praying together before the competition, and asking for blessings from parents and teachers. Based on observations and interviews, this stage contributes significantly to building students' mental readiness. Students reported feeling calmer, more focused, and more confident before entering the competition. Spiritual values serve as an effective mechanism for self-control, reducing competition anxiety and allowing students to enter the competition with a more stable psychological state.

Stage During the Competition: Strengthening Trust and Emotional Control

During the competition, students face various challenges, including time pressure, high-level problem-solving, and technical obstacles such as network disruptions. Under these conditions, spiritual values are internalized through the habit of personal remembrance and prayer, strengthening trust after maximum effort, and cultivating a positive mindset when facing technical difficulties. Research results show that students accustomed to this approach can manage stress more adaptively. They do not panic easily when facing technical problems and persist in solving problems optimally. This attitude directly affects the stability of students' cognitive performance throughout the competition.

Stage After the Competition: Reflection, Gratitude, and Life Lessons

The post-competition stage focuses on character building and making sense of the competitive experience. Students are encouraged to be grateful for their achievements, to be patient and accept results with grace when they fall short of their targets, and to engage in academic and spiritual reflection on the competition process. Reflection takes place individually and in groups through discussions with their mentoring teachers, both in person and via WhatsApp groups. This stage has been proven to strengthen the values of sincerity and humility, and foster a spirit of continuous learning, so that competition is not seen as an end in itself, but rather as a means of learning and self-development.

Impact of Integrating Spiritual Values on Student Academic Achievement

Improved Cognitive Achievement

Documentation data shows that during the 2020–2021 academic year through the odd semester of 2024–2025, students assisted by the Science Olympiad in Economics at MAN 1 Banda Aceh achieved 70 national-level achievements and 15 provincial-level achievements in Aceh. One significant achievement was these students' success in the 2021 National Science Competition (KSN) in Economics. This achievement demonstrates consistent improvement in the mastery of economic concepts, high-level analytical skills, and student resilience in facing complex competition questions.

Strengthening Psychomotor Aspects and 21st-Century Skills

The use of online competition websites also strengthens students' psychomotor skills and 21st-century skills. Students are trained to use digital technology productively, manage their time effectively, implement problem-solving strategies, and develop technology-based independent learning. These skills make students more adaptable to online competition systems and align with the demands of 21st-century learning, which emphasizes independence and digital literacy.

Changes in Students' Affective and Characteristic Aspects

The study's results indicate significant changes in students' affective and characteristic traits. Students demonstrated increased self-confidence, responsibility, and a sporting and honest attitude in competition. Furthermore, there was an increase in social awareness and a willingness to share knowledge, with students not only focused on individual achievement but also developing into peer tutors who assist their peers in understanding economic material. These findings indicate that integrating spiritual values contributes to the development of a healthy, ethical, competitive character.

Teacher and Student Perceptions of Program Effectiveness

The mentoring teachers found that integrating spiritual values serves as a crucial psychological buffer in Science Olympiad coaching. This approach is considered capable of maintaining student motivation in the long term, especially when facing failure or suboptimal results. Meanwhile, students reported that the spiritual approach prevented them from giving up easily, made them enjoy the learning and competition processes more, and led them to view the competition as a means of learning and self-development rather than simply a matter of winning or losing.

Synthesis of Key Findings

Based on the overall research results, it can be concluded that integrating spiritual values into the use of online competition websites creates a holistic, sustainable development ecosystem. This approach simultaneously positively impacts students' cognitive, affective, and psychomotor aspects. These findings confirm that learning technology media becomes more meaningful and effective when combined with spiritual values as a foundation for character building and student mental resilience.

Discussion

Integration of Technology and Spirituality as a Holistic Development Approach

The results of this study indicate that integrating spiritual values into the use of online competition websites serves not merely as a complementary element to technology-based learning but as a primary foundation for building students' academic, psychological, and character resilience. These findings expand and critique the dominant paradigm in the digital education literature, which tends to position technology as the primary determinant of improved learning achievement without considering students' affective and existential dimensions. Several international studies have confirmed that digital technology significantly increases access, flexibility, and learning efficiency, including in the context of online academic competitions (Pikhart et al., 2024; Scheel et al., 2022; Songkram et al., 2023; Vallo Hult et al., 2025). However, these studies also reveal the downside of intensified technology use, including increased academic stress, competitive anxiety, mental fatigue, and a tendency toward results-oriented learning. It is in this context that the findings of this study are relevant, as they demonstrate that spirituality serves as a balancing factor that neutralizes the psychological stress arising from the use of competitive, high-intensity learning technologies. The integration of spirituality in the development of the Science Olympiad in Economics emphasizes that academic success is not solely determined by the sophistication of the media, the frequency of practice, or the difficulty of the questions, but also by the student's ability to interpret the learning process transcendentally. Technology and spirituality, therefore, do not exist in a mutually exclusive

relationship, but rather form a mutually reinforcing dialectical relationship within a holistic educational framework. The online competition website gains greater pedagogical significance when positioned as an endeavor, not merely a competition.

Three-Stage Model of Spiritual Value Integration from a Theoretical Perspective

The three-stage model of spiritual value integration—pre-competition, during-competition, and post-competition—found in this study represents a significant conceptual contribution to the study of academic achievement development. This model transcends conventional development approaches, which tend to be partial, fragmented, and results-oriented, by offering a continuous and reflective development framework.

In the pre-competition stage, spiritual values function as a mechanism for forming intention, mental readiness, and intrinsic motivation. These findings align with motivational theory, which emphasizes the importance of intrinsic motivation for meaningful and sustainable learning (Stella et al., 2023). In the context of Islamic education, intention (niyyah) serves as a fundamental foundation, guiding students' learning orientation and allowing competitive activities to be understood as part of worship, self-actualization, and a contribution to the institution. This orientation helps students shift their focus from simply pursuing victory to a meaningful learning process.

During the competition, internalizing the values of tawakkul (trust), patience, and optimism serves as a strategy for emotional regulation and self-control. These findings reinforce the view in educational psychology that self-regulation and emotional control directly contribute to cognitive performance in high-pressure situations. Students' practices of dhikr (remembrance of God) and prayer serve as spiritual coping strategies that help maintain emotional stability, reduce panic reactions to technical difficulties, and maintain focused thinking. Thus, spirituality functions not only in the affective domain but also indirectly impacts the quality of cognitive processing. The post-competition stage occupies a crucial position in this model, serving as a space for reflection and internalization of meaning. The values of gratitude and sincerity help students interpret competition outcomes constructively, both when they succeed and when they fail. This reflective approach prevents the development of a narrow achievement orientation (performance goal orientation) and encourages the formation of a mastery goal orientation. Students learn that competition is part of a long-term learning process, not an end goal that determines self-worth or personal value.

Impact of Spiritual Values Integration on Academic Achievement and Character

The improvement in student achievement at MAN 1 Banda Aceh at the city, provincial, and national levels demonstrates that an integrative approach between technology and spirituality does not hinder academic achievement, but rather strengthens it. This finding challenges the assumption that integrating spiritual values can diminish academic focus or weaken students' competitiveness in science-based competitions. Instead, the results of this study indicate that spirituality contributes to increased focus and calm thinking, reduced excessive anxiety through an attitude of trust (relief), and sustained learning motivation through the values of gratitude and sincerity. When students no longer perceive competition as a threat to their self-esteem, they can maximize their cognitive potential. This suggests that spirituality acts as a psychological resource that supports academic performance.

From a character education perspective, integrating spiritual values also fosters sportsmanship, humility, honesty, and social awareness. This finding is important because academic competition is often criticized for fostering individualism, egoism, and a sole focus on results. This research demonstrates that competition can actually be a vehicle for character development when framed within an appropriate value framework and accompanied by reflection.

Theoretical Implications and Contribution to the Literature

This research contributes to three main areas of educational literature. First, within the technology-based learning literature, this research demonstrates that the effectiveness of online competition websites is not solely determined by technical aspects and system design, but is strongly influenced by the surrounding value framework. Technology is value-neutral, but its impact on students is largely determined by the values that guide its use. Second, within the spiritual and character education literature, this research extends the study of spirituality beyond the classroom context into the realm of digital-based academic competition, which has received relatively little attention. The integration of spirituality into the context of competition demonstrates that values education is not limited to the formal classroom but is relevant in high-pressure situations that demand mental resilience. Third, within the contemporary Islamic education literature, this research offers a practical model for integrating Islamic values into modern technology-based learning and competition. These findings strengthen the argument that Islamic education has a high adaptive capacity to address the challenges of the digital era without losing its value, identity, or spiritual foundation.

4. CONCLUSION

This study concludes that integrating Islamic spiritual values into the use of online competition websites is a strategic and effective approach to fostering achievement in the Science Olympiad in

Economics. This integration not only contributes to improving students' cognitive achievement but also plays a crucial role in strengthening the affective, psychomotor, and character dimensions, thus shaping the profile of students who excel academically, are mentally resilient, and possess noble character. The main findings of this study indicate that successful development is not solely determined by technological sophistication or the intensity of academic training, but rather by the educational institution's ability to integrate learning technology with a meaningful value framework. Online competition websites acquire a more comprehensive pedagogical function when integrated with spiritual values such as righteous intentions, trust in God, patience, gratitude, sincerity, and honesty. These values serve as an inner control system that helps students manage the pressure of competition, maintain focus, and interpret the learning process constructively.

This research also produced a three-stage model of spiritual value integration—pre-competition, during the competition, and post-competition—that has proven effective in building a holistic and sustainable science olympiad coaching ecosystem. This model emphasizes that effective academic achievement coaching needs to be designed as a long-term process encompassing mental and spiritual preparation, mentoring during the competition, and post-competition reflection on values. Thus, academic competitions become not only a means of achieving success, but also a vehicle for character building and life learning.

Policy Implications

The findings of this research have several relevant policy implications for decision-makers in the education sector, particularly regarding the development of technology-based academic achievement coaching in Islamic schools (madrasah) and secondary schools. First, educational policy-making institutions, such as the Ministry of Education and the Ministry of Religious Affairs, need to consider integrating values and spiritual dimensions into policies for developing digital learning and academic competitions. Science olympiad coaching policies should not only emphasize technical aspects, medal achievements, and cognitive indicators, but also incorporate strengthening mental resilience, competitive ethics, and character education as part of national coaching standards.

Second, the results of this study support the need to develop a national guideline for holistic science olympiad coaching, incorporating pre-, during-, and post-competition stages as a standard coaching framework. This guideline can serve as a reference for madrasahs and schools in designing coaching programs that are not only results-oriented, but also process- and value-oriented.

Third, in the context of Islamic education, policies to strengthen superior madrasahs can focus on developing technology-based learning and competition models integrated with Islamic values. This aligns with efforts to strengthen religious moderation and character education in the digital era, as well as to position madrasahs as educational institutions that adapt to technological developments without losing their core values.

Practical Implications

In practice, the findings of this study have several implications for madrasah principals, teachers, and science olympiad coaches. First, teachers and science olympiad coaches need to view achievement coaching as a holistic educational process, not simply a matter of practice questions and competition selection. The integration of spiritual values can be implemented in simple yet consistent ways, such as cultivating the habit of prayer, reflecting on values, and reinforcing the meaning of learning before and after competitions. Second, the use of online competition websites needs to be designed pedagogically, not merely technologically. Teachers are advised to use competition platforms for reflective learning, competency mapping, and character building, rather than simply as a scoring tool. Emotional and spiritual support during competitions has been shown to help students manage stress and maintain academic performance. Third, for students, this approach provides a healthier framework for interpreting academic competitions. Students are no longer trapped solely in a win-or-lose orientation but can view competitions as a means of self-development, continuous learning, and dedication. This has the potential to increase sustainable motivation for learning and prevent academic burnout.

Limitations and Directions for Further Research

While this study makes significant theoretical and practical contributions, several limitations should be noted. This study focused on a single, leading madrasah (Islamic school) with a strong religious character, so generalizations of the findings should be made with caution. Furthermore, the qualitative, best-practice-based approach does not yet allow for quantitative testing of causal relationships. Therefore, further research is recommended to develop cross-institutional comparative studies that combine qualitative and quantitative approaches and test the effectiveness of this spiritual integration model across different educational contexts and fields. Further research could also explore integrating spiritual values into artificial intelligence-based learning platforms and learning analytics.

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