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Integrating Spiritual Values into Project-Based Learning: A Conceptual Framework Informed by Seyyed Hossein Nasr's *Knowledge and the Sacred*

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Abstract: This study develops a conceptual framework for integrating spiritual values into project-based learning (PjBL), informed by Seyyed Hossein Nasr's *Knowledge and the Sacred*. The library research used a descriptive-analytical approach that combined document analysis, thematic interpretation, and conceptual synthesis. The primary text was examined alongside scholarly literature on Nasr, spiritual education, and PjBL to identify philosophical arguments, derive educational principles, and articulate pedagogical implications. The analysis yielded four principles: unity of knowledge and spirituality, holistic human formation, moral responsibility associated with knowledge, and reflective awareness of meaning. These principles inform seven interconnected processes: project selection, planning, investigation, collaboration, implementation, evaluation, and reflection. Spiritual integration emerges as alignment among educational purposes, inquiry, relationships, and reflective judgment, with explicit connections to transcendent meaning. The study's originality lies in explaining the interpretive connections between sacred epistemology and project design while distinguishing philosophical grounding, observable ethical expressions, and personal spiritual interpretation. The framework contributes conceptual criteria for developing learning objectives, guiding project decisions, and assessing appropriate educational evidence. It also identifies conditions that require contextual adaptation and sets an agenda for future classroom-based empirical research on feasibility, ethical judgment, reflective capacity, spiritual awareness, and academic learning outcomes.

***Abstrak**: Penelitian ini bertujuan mengembangkan kerangka konseptual integrasi nilai spiritual dalam pembelajaran berbasis proyek (PjBL), berlandaskan pemikiran Seyyed Hossein Nasr dalam Knowledge and the Sacred. Penelitian menggunakan studi kepustakaan dengan pendekatan deskriptif-analitis yang menggabungkan analisis dokumen, interpretasi tematik, dan sintesis konseptual. Teks primer dikaji bersama literatur ilmiah tentang Nasr, pendidikan spiritual, dan PjBL untuk mengidentifikasi argumen filosofis, merumuskan prinsip pendidikan, serta menjelaskan implikasi pedagogisnya. Analisis menghasilkan empat prinsip, yaitu kesatuan pengetahuan dan spiritualitas, pembentukan manusia secara holistik, tanggung jawab moral yang melekat pada pengetahuan, serta kesadaran reflektif terhadap makna. Keempat prinsip memandu tujuh proses yang saling terhubung, meliputi pemilihan proyek, perencanaan, investigasi, kolaborasi, implementasi, evaluasi, dan refleksi. Integrasi spiritual dipahami sebagai keselarasan tujuan pendidikan, penyelidikan, hubungan antarmanusia, dan pertimbangan reflektif yang*

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terhubung dengan makna transenden. Kebaruan penelitian terletak pada penjelasan hubungan interpretatif antara epistemologi sakral dan desain proyek dengan membedakan landasan filosofis, ekspresi etis yang teramati, serta interpretasi spiritual personal. Kerangka ini berkontribusi menyediakan kriteria konseptual untuk merumuskan tujuan pembelajaran, memandu keputusan proyek, dan menilai bukti pendidikan proporsional. Penelitian juga mengidentifikasi kebutuhan adaptasi kontekstual serta merumuskan agenda pengujian empiris mengenai kelayakan, pertimbangan etis, kapasitas reflektif, kesadaran spiritual, dan hasil belajar akademik.

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INTRODUCTION

Education involves developing intellectual competence alongside judgment, responsibility, and a meaningful understanding of human existence. In Islamic educational thought, these purposes are interconnected because acquiring knowledge shapes how individuals understand themselves, relate to others, and act in the world (Rahman BP et al., 2022; Hadi et al., 2024). Scholarship on spiritual education and Islamic educational philosophy similarly emphasizes the relationship between knowledge, character formation, and the purposes guiding human action (N. Afifah, 2015; Azizah et al., 2023). These concerns acquire particular significance when educational innovation is evaluated primarily through measurable achievement, while its underlying assumptions about knowledge and human development receive less attention. The philosophical question concerns how educational practices can connect intellectual inquiry with ethical responsibility and spiritual meaning.

This question requires conceptual clarity because spirituality encompasses several related but distinguishable dimensions. Spiritual values concern the commitments that orient decisions and relationships, spiritual awareness concerns the recognition of meaning and transcendence, and spiritual intelligence and competence describe capacities whose definitions depend on particular theoretical frameworks. A recent systematic review of empirical research on pupils' and students' spiritual well-being identified substantial variation in terminology and operationalization, which complicates comparisons across studies (Klokočka, 2025). In this study, spiritual values refer to educational commitments grounded in a relationship between knowledge, human responsibility, and transcendent reality. In the classroom, these values may be expressed through integrity, care, justice, and reflection, while their philosophical grounding requires an explicit account of why these commitments matter.

Seyyed Hossein Nasr's *Knowledge and the Sacred* offers a philosophical starting point for examining this relationship. Nasr (1989) associates the modern crisis of knowledge with desacralization, through which knowing becomes detached from its metaphysical foundations and transcendent significance. His conception of *scientia sacra* situates knowledge within an order of reality that connects truth,

wisdom, and the knowing subject's transformation. Studies of Nasr's intellectual background and educational thought have examined the implications of this position for spiritual formation and the relationship between religion and science (Abduh & Kerwanto, 2023; Nurhidayati, 2019; Shamshiri et al., 2020). Related scholarship has highlighted its significance for environmental philosophy, particularly the responsibilities that arise from human relationships with the natural world (Masykur et al., 2023). These discussions suggest that educational purposes can be examined through the relationship between what learners know, how they acquire knowledge, and the ends they direct it toward.

This perspective's educational implications also need to be distinguished from the diverse ways values are expressed within institutions. Research on conformity and compliance among pesantren students addresses one dimension of institutional conduct (Azmi et al., 2025), while studies of Islamic intellectual traditions examine how particular understandings of Islam inform educational practice (Mushaffa et al., 2026). Such discussions provide contextual perspectives on values and formation. A Nasrian framework raises a further question about the conception of knowledge underlying those practices. Accordingly, this study examines how spiritual commitments can inform inquiry and judgment while preserving the distinction between observable conduct and learners' internal spiritual experiences.

Project-based learning (PjBL) provides a relevant pedagogical context for this investigation. It organizes learning around sustained inquiry into meaningful questions, artifact or solution development, collaboration, and reflection (Guo et al., 2020; Kokotsaki et al., 2016). These characteristics give students opportunities to make consequential decisions about evidence, resources, relationships, and the purposes of their work. Meta-analytic evidence indicates that PjBL can support learning outcomes, although its effects vary across instructional and contextual conditions (Zhang & Ma, 2023). A separate meta-analysis found generally positive motivational effects across problem-based, project-based, and case-based learning, with variation associated with implementation and academic domain (Wijnia et al., 2024). These findings establish the pedagogical relevance of active inquiry while leaving open the philosophical question of how its purposes should be determined.

The selection of PjBL in this study rests on the visibility of these decisions throughout a sustained project. Students define a problem, plan activities, investigate evidence, collaborate, implement their work, evaluate its quality, and reflect on its significance. These processes offer identifiable points at which the relationship between knowledge and responsibility can be examined. Everyday school social problems, including those discussed in popular educational commentary, may supply contextual illustrations for project questions (Risno, 2023). Their educational significance, however, depends on how teachers and students formulate the problem, evaluate information, consider affected groups, and justify proposed responses. Spiritual integration therefore requires accounting for the purposes and judgments shaping the project throughout its development.

Existing research has already connected PjBL with spiritual development. Sofiyana et al. (2024) reported that a differentiated PjBL model positively influenced students' spiritual intelligence. Cahyono et al. (2026) developed a conceptual framework linking PjBL processes to spiritual competence by

integrating Islamic educational philosophy, experiential learning, and transformative learning. Their framework explicitly incorporates transcendental awareness, value appreciation, moral action, and reflective practice. This contribution demonstrates that the connection between PjBL and spiritual formation has an established conceptual basis. The present study extends this discussion by examining how a framework can be derived from a specified philosophical text and how its pedagogical implications can remain accountable to that text's epistemological commitments.

The research gap therefore concerns the justification for translating sacred epistemology into project design. Identifying values such as honesty, responsibility, and respect provides an initial educational vocabulary. Still, a framework informed by Nasr must explain how they relate to his understanding of knowledge and reality. It must also address a potential tension between students' active construction of understanding in PjBL and Nasr's commitment to transcendent truth. This requires distinguishing learners' developing interpretations from the philosophical status of the truth they seek. The resulting framework should clarify how inquiry, dialogue, and critical judgment can operate within an explicitly spiritual orientation. Its contribution depends on making the sequence from textual interpretation to educational principle and pedagogical implication sufficiently transparent.

This study therefore develops a conceptual framework for integrating spiritual values into PjBL informed by Nasr's *Knowledge and the Sacred*. It addresses three questions. What educational principles can be defensibly derived from Nasr's conception of sacred knowledge? How do these principles relate to the opportunities and tensions within PjBL? How can they inform project selection, planning, investigation, collaboration, implementation, evaluation, and reflection? The study advances the argument that spiritual integration involves an intentional orientation of educational purposes, inquiry, relationships, and reflective judgment. Its intended contribution is a philosophically justified framework that clarifies the relationship between sacred knowledge and pedagogical design, together with conceptual boundaries that can guide subsequent classroom investigation.

METHOD

This study employed library research with a descriptive-analytical approach to develop a conceptual framework for integrating spiritual values into project-based learning (PjBL) (Qomar, 2024). Its design combined philosophical interpretation with conceptual synthesis. Nasr's sacred epistemology provided the philosophical basis for examining educational purposes, while PjBL supplied the pedagogical processes through which its educational implications could be articulated. This positioning follows the principle that conceptual research should explicitly justify the selection of theoretical resources and explain their respective roles in developing a contribution (Jaakkola, 2020). The analysis examined how educational principles are derived, how they align with PjBL, and what they imply for project design.

The principal source was Seyyed Hossein Nasr's *Knowledge and the Sacred*, cited in its 1989 edition. The analysis focused on arguments concerning the desacralization of knowledge, *scientia sacra*, human nature, and the relationship between knowing and spiritual transformation (Nasr, 1989). Secondary sources comprised scholarly books and journal articles on Nasr's philosophy, Islamic education, spiritual formation, and PjBL. These sources served distinct functions. Scholarship on Nasr supported contextual interpretation, educational literature clarified the implications for human formation, and PjBL research informed the pedagogical mapping. Qomar (2022a) provided a broader methodological reference for examining religious ideas within their intellectual contexts.

Literature selection focused on relevance to the research questions and each source's contribution to the conceptual argument. Priority was assigned to Nasr's primary text, scholarship directly interpreting his epistemology, and publications explaining the defining characteristics or spiritual dimensions of PjBL. Recent studies contextualized contemporary debates, while earlier works supplied foundational concepts. The selection also distinguished conceptual arguments from empirical findings, allowing evidence about instructional outcomes to inform the discussion without determining the validity of philosophical claims. Sources were evaluated based on authorship, publication context, conceptual relevance, and argumentative support.

Data collection involved document analysis through identifying, classifying, and interpreting relevant textual material (Bowen, 2009). The unit of analysis was a meaningful passage or connected argument addressing knowledge, transcendence, human formation, responsibility, or educational practice. Passages were interpreted within their surrounding arguments to preserve conceptual context. Content analysis helped identify and organize concepts, while thematic interpretation examined their relationships. This distinction clarified how textual material informed the subsequent educational synthesis.

The analysis proceeded through three connected stages. First, Nasr's arguments were examined to identify their epistemological assumptions and implications for the relationship between knowledge and human development. Second, these arguments were synthesized into educational principles through an interpretive process informed by qualitative conceptual development (Qomar, 2022b). Four principles organized this synthesis: the unity of knowledge and spirituality, holistic human formation, moral responsibility associated with knowledge, and reflective awareness of meaning. These principles represent the study's educational interpretation of Nasr's work. Their justification depends on the relationship between the primary argument, the interpretive reasoning, and the educational implication.

Third, the principles were mapped onto seven interconnected PjBL processes: project selection, planning, investigation, collaboration, implementation, evaluation, and reflection. These processes functioned as analytical categories for examining project design, with individual principles potentially informing several processes. The mapping considered each activity's purpose, the decisions required of learners, the role of teacher guidance, and opportunities for ethical and spiritual reflection. It also examined compatibility and tensions between learner inquiry and Nasr's

understanding of transcendent truth, particularly the distinction between constructing an understanding and establishing the philosophical status of truth.

Interpretive adequacy was considered through textual grounding, conceptual coherence, and clarity of inference. Direct statements from Nasr, interpretations within secondary scholarship, and the study's pedagogical proposals were distinguished throughout the argument. Attention to the researcher's interpretive role and the consistency between theoretical assumptions and analytical claims was informed by Braun and Clarke's (2024) discussion of methodological coherence and transparent thematic reporting. The resulting framework offers a reasoned conceptual basis for educational design. Its implications for students' spiritual awareness, ethical judgment, and academic learning remain questions for subsequent empirical investigation.

RESULTS AND DISCUSSION

Sacred Knowledge and the Critique of Modernity in *Knowledge and the Sacred*

The analysis identifies a relationship between the meaning of knowledge and the purposes of education as the philosophical basis for spiritually integrated project-based learning. In *Knowledge and the Sacred*, Nasr (1989) examines desacralization as a transformation in the relationship between knowledge, reality, and the knowing subject. His discussion raises questions about the ends toward which intellectual activity is directed and the understanding of human existence that supports those ends. Applied to education, this perspective invites an examination of how learning objectives, inquiry, and assessment express particular assumptions about what knowledge is for.

The distinction between intellect and discursive reason is important to this interpretation. In Chapter 4, Nasr situates *scientia sacra* within a metaphysical understanding of reality and associates intellectual knowledge with spiritual realization. Chapter 5 develops an account of human responsibility through the concept of the pontifical human being, whose actions remain accountable to a transcendent order. These arguments provide textual starting points for examining the relationship between knowing, formation, and responsibility (Nasr, 1989, chaps. 4–5). The educational principles developed here extend these arguments into questions of pedagogical design.

This interpretation has implications for how educational innovation is evaluated. Investigation, collaboration, technological sophistication, and artifact production may demonstrate pedagogical activity, while the purposes guiding these activities require separate consideration. A project concerning environmental problems, for example, involves choices about which problems deserve attention, whose interests should be considered, and how proposed solutions affect living systems. These choices connect knowledge acquisition with judgments about responsibility. Masykur et al. (2023) provide a relevant contextual discussion by examining the ecological implications of Nasr's *scientia sacra*.

Nasr's broader work on science and Islamic civilization also places scientific activity within an intellectual and cultural setting shaped by understandings of reality and human purpose (Nasr, 2001). Scholarship on his educational relevance

has developed this connection through discussions of spiritual humanism, the integration of Islam and science, and the cultivation of the human person (Abduh & Kerwanto, 2023; Adiningsih et al., 2023; Basith et al., 2024). These studies support examining education's philosophical orientation alongside its instructional organization.

This study's conceptual finding is that spiritual integration requires coherence among educational purposes, ways of knowing, relationships, and reflection. Within this framework, a project becomes a setting in which students investigate a problem and consider how their knowledge should guide action. The spiritual dimension rests on an explicit relationship with transcendent meaning, while its educational expression becomes visible through the reasons, decisions, and responsibilities that shape the project.

Educational Principles Derived from Nasr's Sacred Epistemology

Four principles organize the educational interpretation of Nasr's thought. They address different analytical questions. The unity of knowledge and spirituality concerns the orientation of knowing. Holistic human formation concerns the person being educated. Moral responsibility concerns the consequences and obligations associated with inquiry and action. Reflective awareness concerns how learners examine the meaning of their experiences.

These principles are interconnected. Their separation provides an analytical structure for explaining how philosophical commitments may inform educational decisions. The four-part arrangement represents the conceptual synthesis developed in this study and requires justification through the relationship between Nasr's arguments and the proposed educational implications.

Unity of Knowledge and Spirituality

The first principle concerns the relationship between intellectual activity and transcendent meaning. Nasr's account of sacred knowledge provides a basis for considering how disciplinary learning relates to broader understandings of reality and human purpose (Nasr, 1989). Its educational implication is that students should have opportunities to examine why knowledge matters and how the purposes of inquiry influence its use.

In PjBL, this principle informs project selection and justification. Students may investigate water consumption, waste management, or access to educational resources while considering the responsibilities associated with those issues. In an explicitly Islamic educational context, teachers can connect these questions to relevant understandings of human accountability and care for creation. The connection requires reasoned discussion of how these commitments influence project decisions.

This principle also preserves the distinctive scope of spiritual integration. Honesty, care, and responsibility can be expressed within several philosophical traditions. A Nasrian interpretation locates them within a conception of reality that includes transcendence. The framework therefore requires teachers to explain the relationship between the project's academic purposes, its ethical commitments, and its spiritual orientation.

Holistic Human Formation

The second principle concerns learners' development as intellectual, moral, relational, and spiritual persons. Nasr's conception of knowledge focuses on forming the knowing subject, while broader discussions of Islamic philosophy provide context for understanding the relationship between knowledge and human development (Nasr, 1989; Nasr & Leaman, 2003). Contemporary scholarship on human nature and education similarly emphasizes the importance of articulating the conception of the person underlying educational practice (Nurdiyanto et al., 2025).

For PjBL, holistic formation requires attention to the learning process as well as the quality of the artifact. Students investigate evidence, negotiate responsibilities, encounter uncertainty, and respond to feedback. These experiences create opportunities to examine their judgment, relationships, and commitments. Adiningsih et al. (2023) and Basith et al. (2024) offer related discussions of spiritual and ethical formation through interpretations of Nasr.

Different dimensions of formation nevertheless require appropriate forms of evidence. A well-supported explanation can demonstrate conceptual understanding. Completing tasks responsibly can provide evidence of participation. A reflective account may reveal how a learner interprets an experience. Each supports a particular educational judgment, with internal spiritual experience retaining its personal and interpretive character.

Moral Responsibility Associated with Knowledge

The third principle connects knowing with accountability for how knowledge is acquired, communicated, and applied. This educational interpretation asks students to consider how their decisions affect other people and the environment. Nasr's treatment of human responsibility provides a philosophical basis for this extension, while Arifin et al. (2022) link its educational significance to the purposes and organization of Islamic education.

Within PjBL, responsibility operates throughout the project. It includes selecting a problem fairly, acknowledging sources, representing evidence accurately, considering possible harms, and revising a proposed solution when its consequences become apparent. Intellectual integrity is therefore treated as an expression of moral responsibility across inquiry.

Responsibility also involves distributing opportunities within a group. Students' access to materials, confidence in discussion, and available time may differ. A fair project design provides ways for learners to contribute meaningfully and explain how responsibilities were negotiated. These considerations connect epistemic conduct with the social conditions under which a project is completed.

Reflective Awareness of Meaning

The fourth principle concerns learners' interpretation of their work's purposes and significance. Discussions of Nasr's response to the crisis of modern humanity emphasize the importance of spiritual orientation and self-understanding (Irawan, 2019). Within this framework, reflective awareness translates this concern

into opportunities to examine the assumptions, commitments, and consequences associated with learning.

Reflection can occur when students select a question, interpret unexpected evidence, resolve a disagreement, or evaluate their final work. Teachers may ask how a decision expresses responsibility, whose perspective has been overlooked, or how the experience has influenced the learner's understanding of knowledge and its use. These questions connect reflection with decisions made during the project.

Reflective awareness functions as a capacity through which students examine values and meaning. Its educational quality depends on the depth of reasoning and the connection between reflection and experience. Assessment can consider whether learners explain their decisions, acknowledge uncertainty, and recognize consequences while allowing different personal interpretations.

Table 1. Interpretive Derivation of Educational Principles from Nasr's Sacred Epistemology

Educational principle	Textual basis in *Knowledge and the Sacred*	Interpretive connection	Implication for educational design
Unity of knowledge and spirituality	Discussions of desacralization and *scientia sacra* in Chapters 1 and 4	The orientation of knowing is connected with an understanding of reality and transcendence.	Connect disciplinary objectives with explicit questions about purpose, meaning, and spiritual responsibility.
Holistic human formation	Discussions of human existence and the transformative significance of knowledge in Chapters 5 and 10	Learning participates in the formation of the knowing subject.	Attend to intellectual understanding, relationships, ethical judgment, and opportunities for spiritual reflection.
Moral responsibility associated with knowledge	The account of human accountability in Chapter 5, read alongside the treatment of the cosmos in Chapter 6	Human capacities entail responsibilities toward others and the natural world.	Integrate integrity, fairness, care, and consideration of consequences throughout inquiry and implementation.
Reflective awareness of meaning	The relationship between knowledge and spiritual realization developed in Chapters 4 and 10	Knowing invites examination of its significance for the learner's understanding and conduct.	Provide recurring opportunities to interpret experiences, justify decisions, and reconsider purposes.

Note. The principles and pedagogical implications are the study's interpretive synthesis. Chapter references identify the relevant textual discussions rather than a set of educational stages formulated by Nasr.

Project-Based Learning as a Contemporary Pedagogical Framework

PjBL provides a structure within which the educational implications of these principles can be examined. Its defining characteristics include sustained investigation, meaningful questions, student participation in decision-making, collaboration, and the development of an artifact or response (Kokotsaki et al., 2016). Guo et al. (2020) identify cognitive, affective, behavioral, and artifact-related outcomes within higher education research on PjBL. This range supports examining both the processes and products of learning.

Recent evidence also shows that PjBL effects vary with instructional conditions. Zhang and Ma (2023) report positive overall effects on learning outcomes alongside substantial variation across studies. Wijnia et al. (2024) identify generally positive motivational effects across problem-based, project-based, and case-based learning, with differences associated with implementation and academic domain. These findings reinforce the importance of specifying how a project is designed, supported, and evaluated. They provide evidence about educational outcomes within the studies reviewed, while the present framework addresses the philosophical justification of project purposes.

The choice of PjBL rests on the sequence of consequential decisions made over the course of a sustained project. Students help define a problem, organize an investigation, interpret information, negotiate group responsibilities, implement a response, and evaluate its effects. Each process offers a point where the relationship between knowledge and responsibility becomes explicit. Other forms of active learning may offer related opportunities, with PjBL providing a particularly visible connection between inquiry, collective action, and an outcome presented for consideration.

Compatibility with Nasr's epistemology nevertheless requires philosophical qualification. Students construct explanations and develop understanding through inquiry. Nasr's account locates truth within a reality that transcends individual interpretation. The proposed framework accommodates this relationship by distinguishing the development of understanding from the philosophical grounds of truth. Learners may question evidence, revise explanations, and debate applications while considering the spiritual commitments informing the purposes of their inquiry.

Teacher guidance is central to this arrangement. Teachers provide disciplinary support, introduce relevant philosophical and religious resources, and ask students to justify their interpretations. A spiritually oriented learning environment also requires space for questions and disagreement. Students' reasoning should remain open to examination, including when a project uses explicitly religious language. This condition protects the intellectual demands of inquiry and clarifies how spiritual commitments shape particular decisions.

Integrating Spiritual Values into PjBL from a Nasrian Perspective

The mapping translates four educational principles into seven interconnected PjBL processes. The processes serve as analytical categories for design and reflection, with collaboration and reflection potentially recurring throughout the project. A principle can inform several processes, and a single process can express several principles.

Spiritual awareness refers here to attention to transcendent meaning and responsibility. Honesty, fairness, care, and respect represent ethical expressions that may arise within that orientation. Reflection provides a process through which students examine their purposes and decisions. This distinction clarifies the relationship among philosophical principles, value commitments, and learning activities.

Table 2. A Nasrian Mapping of Educational Principles onto Seven PjBL Processes

PjBL process	Relevant educational principles	Values and reflective focus	Proposed learning activities	Evidence available for educational review
Project selection	Unity of knowledge and spirituality; moral responsibility	Purpose, care, and spiritual awareness	Justify the importance of the problem, identify affected groups, and explain its relationship to relevant spiritual commitments.	A project rationale explaining academic relevance, beneficiaries, and guiding commitments.
Planning	Moral responsibility; holistic human formation	Accountability, fairness, and responsible resource use	Negotiate roles, identify foreseeable risks, plan participation, and establish appropriate procedures.	A plan recording responsibilities, resources, ethical considerations, and reasons for decisions.
Investigation	Unity of knowledge and spirituality; moral responsibility	Honesty, intellectual humility, and respect for evidence	Gather relevant information, acknowledge sources, distinguish observations from interpretations, and examine uncertainty.	Source records, investigation notes, supported explanations, and acknowledged limitations.
Collaboration	Holistic human formation; moral responsibility	Justice, respect, and attentive participation	Negotiate contributions, discuss disagreements, and respond to differences in access or confidence.	Records of negotiated roles, peer feedback, and reasoned responses to disagreements.
Implementation	Moral responsibility; holistic human formation	Care, reliability, and accountability	Develop and revise the proposed response while monitoring its effects on participants, resources, and surroundings.	An artifact or implemented response accompanied by a record of revisions and consequences considered.
Evaluation	Moral responsibility; reflective awareness of meaning	Fair judgment, integrity, and accountability	Evaluate academic quality, examine consequences, and consider feedback from relevant audiences.	Criteria-based evaluations, evidence of feedback, and explanations of strengths and limitations.
Reflection	Reflective awareness of meaning; unity of knowledge and spirituality	Purpose, self-examination, and spiritual awareness	Examine how project decisions relate to knowledge, responsibility, personal understanding, and transcendent commitments.	Reflective accounts connecting specific experiences with reasons, values, uncertainties, and future action.

Note. The activities and evidence are proposed design elements. Their educational interpretation depends on context, age, disciplinary purposes, and the opportunities available to learners.

The table locates responsibility and reflection across the project cycle. During investigation, for example, a commitment to truthfulness influences how evidence is recorded and communicated. During implementation, care influences the selection of materials and consideration of possible harms. During evaluation, accountability influences whether a group acknowledges weaknesses in its work. Spiritual integration acquires substance through the relationship between commitments and these decisions.

The wider literature on integrating knowledge and religion provides a context for this approach. Darda (2015) discusses conceptual developments in integration, while S. N. Afifah (2024) examines relationships between learning theory and Islamic values. Azizah et al. (2023) situate educational practice within broader Islamic educational purposes. These sources support considering the relationship between values and learning, with the seven-process mapping constituting the contribution developed in this study.

A Nasrian Framework for Spiritually Integrated Project-Based Learning

The framework connects sacred epistemology, educational principles, learning design, and anticipated educational outcomes. Sacred epistemology supplies the philosophical orientation. The four principles articulate its educational implications. The seven PjBL processes provide settings in which those implications can shape questions, decisions, relationships, and reflection.

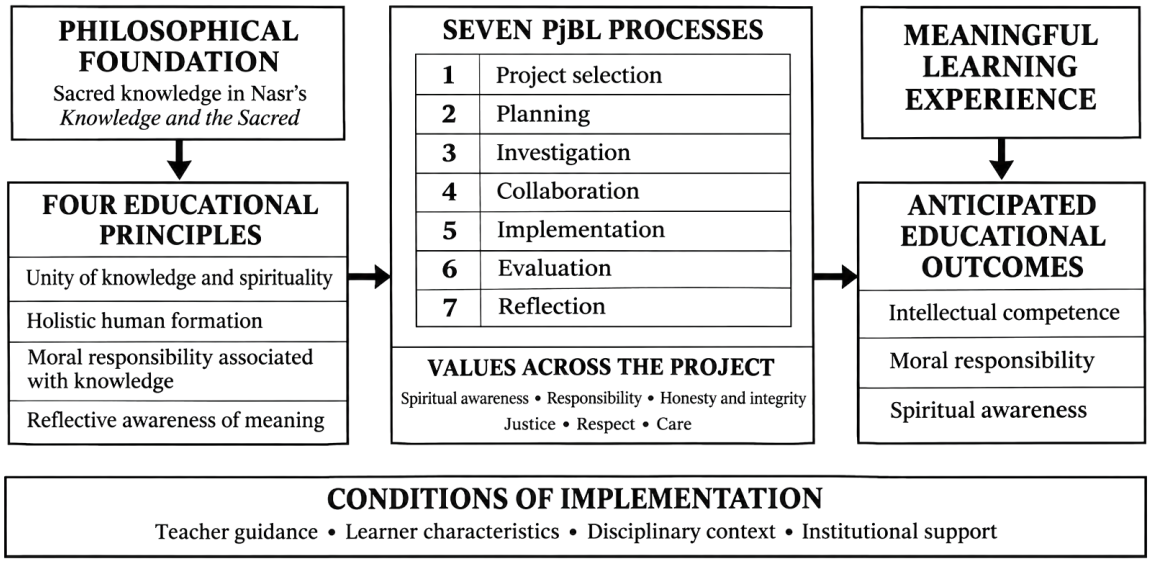

Figure 1. A Nasrian Framework for Spiritually Integrated Project-Based Learning

The relationship represented by Figure 1 should be understood as an interpretive design framework. Its connections express a reasoned proposal about how philosophical commitments can inform pedagogy. Teacher judgment, learner characteristics, disciplinary expectations, institutional culture, and access to resources influence how the proposal can be enacted. These conditions also affect the kinds of evidence that can be used to examine its educational consequences.

A distinguishing feature of the framework is the relationship between its spiritual grounding and its observable educational expressions. Responsibility and respect provide points of contact with general ethical education. Their Nasrian

interpretation depends on an explicit account of knowledge, human existence, and transcendence. Maintaining this connection is necessary for explaining the framework's philosophical identity.

Studies of other spiritual traditions illustrate the importance of contextual specificity. Ihsan and Islam (2023) examine Nūr Muḥammad within the Tijaniyah tradition, while Islam and Nasution (2024) analyze *suhbah* and the formation of *adab*. These studies concern particular metaphysical and relational settings. Their relevance here is that they show spiritual concepts gain meaning within identifiable traditions and practices. The proposed classroom framework similarly requires an explicit explanation of its conceptual grounds and educational context.

An Illustrative Application through an Environmental Project

A school waste-reduction project illustrates how the framework could guide practice. This example is a proposed application of the conceptual model. It would require adaptation to the learners' age, curriculum, and institutional setting.

During project selection, students identify a waste problem and explain its importance for the school community. In an Islamic educational context, teachers may facilitate discussion of care for creation and accountability for resource use. The project rationale then connects an academic question about waste with the commitments informing its selection.

During planning and investigation, students negotiate roles, determine how to record waste, and establish procedures for collecting information. They distinguish measured quantities from estimates and acknowledge limitations in their records. Collaboration requires attention to participation, including whether some students have fewer opportunities to use equipment or contribute to decisions.

Implementation may involve developing a sorting system, producing a campaign, or testing a reduction strategy. Students consider whether the response introduces additional waste, places unreasonable demands on others, or depends on resources that cannot be maintained. They revise the response in light of evidence and feedback.

Evaluation considers the quality of the investigation, the response's practicality, and its consequences. Reflection examines how the group's choices expressed responsibility and how learners understand their relationship with the environment. The connection to ecological responsibility aligns with the contextual discussion developed by Masykur et al. (2023).

Pepilina et al. (2025) provide a relevant empirical comparison through an exploratory study of Islamic values within STEAM and project-based activities in a pesantren. Their study illustrates the possibilities and institutional demands of connecting disciplinary work with Islamic educational commitments. This framework provides a philosophical rationale for examining such connections across the project cycle.

Previous Studies and Research Position

The framework sits at the intersection of scholarship on Nasr and research on spiritually oriented learning. Khoirudin (2014) examines the educational significance of Nasr's metaphysics, while Irawan (2019), Adiningsih et al. (2023),

and Basith et al. (2024) develop related discussions of spiritual orientation and human formation. These studies establish a basis for considering the educational implications of Nasr's thought. The present analysis extends that discussion by explaining how selected implications can inform decisions within PjBL.

Research on instructional integration provides a second point of comparison. Harahap and Darmana (2020) investigate spiritually integrated chemistry materials within a PBL setting. Their study contributes evidence about value integration in disciplinary teaching and should be distinguished from research specifically examining project-based learning. Sofiyana et al. (2024) examine PjBL more directly through differentiated strategies and report an influence on students' spiritual intelligence. These studies focus on specific instructional arrangements and measures, which should remain distinct from the philosophical claims developed here.

Cahyono et al. (2026) offer the closest conceptual comparison by linking PjBL processes to spiritual competence through Islamic educational philosophy, experiential learning, and transformative learning. Their work already includes transcendental awareness, moral action, and reflection. Nurhasan et al. (2026) also examine Islamic educational theology within PjBL, including implementation conditions and institutional constraints. The present study's contribution therefore rests on the textual derivation and justification of a Nasrian framework, particularly explaining how sacred epistemology informs educational principles and how those principles relate to project decisions.

The distinction between levels of integration is also important. Kusumawati and Nurfuadi (2024) address the integration of pesantren and national curricula, while Yuyung et al. (2024) discuss science and religion within modern education. These contributions concern broader curricular and educational relationships. The present framework operates at the project-design level, where teachers and students must translate commitments into decisions that can be described and examined.

Main Finding and Theoretical Implications

The principal conceptual finding is that spiritually integrated PjBL requires alignment among philosophical grounding, educational purposes, inquiry, relationships, and reflective judgment. Adding a religious theme may establish a project's subject matter. Substantive integration becomes visible when spiritual commitments influence the selection of questions, treatment of evidence, distribution of responsibilities, consideration of consequences, and interpretation of experience.

The framework clarifies four related levels. Sacred epistemology provides the philosophical grounding. Educational principles express its implications for learning. Classroom activities create opportunities to enact those implications. Evidence from the activities supports bounded judgments about learning. This structure helps explain how a philosophical argument can inform pedagogy while preserving the different purposes of conceptual justification and empirical evaluation.

A further implication concerns the relationship between ethics and spirituality. Integrity, care, and fairness offer observable expressions that teachers can discuss and evaluate. Spiritual awareness includes learners' interpretations of meaning and transcendence. Klokočka's (2025) review identifies inconsistent terminology and operationalization across research on spiritual well-being, reinforcing the need to define these dimensions carefully. Spiritual values, spiritual awareness, spiritual intelligence, and spiritual competence should therefore be treated according to their respective conceptual and evidential requirements.

The framework also contributes to the discussion of learner agency. Students exercise judgment when they interpret evidence, question assumptions, and evaluate proposed responses. Teachers make the philosophical orientation available for examination through dialogue and disciplinary guidance. The educational relationship then combines accountable inquiry with opportunities for personal interpretation.

Practical Implications and Assessment

Teachers can use the framework to formulate linked academic, ethical, and reflective objectives. Academic objectives specify the knowledge and skills addressed by the project. Ethical objectives concern conduct, relationships, and consequences. Reflective objectives invite students to explain how their experiences relate to purpose and responsibility. Arifin et al. (2022) and Abduh and Kerwanto (2023) provide relevant discussions of educational purposes and the relationship between intellectual and spiritual formation.

Implementation also requires institutional support. Curriculum integration involves decisions about time, assessment expectations, teacher preparation, and learning resources, as Kusumawati and Nurfuadi (2024) illustrate. The challenges reported in Pepilina et al. (2025) and Nurhasan et al. (2026) further underscore the importance of teacher competence and the conditions surrounding project work.

Assessment should use criteria appropriate to the evidence available. Teachers can examine the accuracy of explanations, acknowledgment of sources, consideration of consequences, fairness of participation, and quality of reflective reasoning. Individual reflections should allow students to acknowledge uncertainty and describe different experiences. Evaluation of their reasoning requires clear criteria and respect for the personal character of spiritual interpretation.

Feedback can connect these dimensions through specific project decisions. A teacher might ask why a group excluded a source, how it responded to unequal participation, or what evidence prompted a revision. Such questions make responsibility part of intellectual practice and provide students with opportunities to improve both their work and their judgment.

Limitations and Directions for Further Research

The framework depends on an interpretive reading of Nasr and a selective synthesis of educational literature. Alternative readings may emphasize different aspects of his metaphysics or identify additional tensions with contemporary pedagogy. The four principles organize the present argument and remain open to further conceptual examination.

The framework also requires contextual adaptation. Learners' age, religious backgrounds, disciplinary expectations, teacher preparation, and institutional resources influence its application. The environmental project illustrates design possibilities. Classroom evidence is needed to examine feasibility, learner responses, and educational consequences.

Further research could develop and evaluate project designs through classroom case studies or design-based research. Such work should examine the relationship between intended commitments and enacted decisions, including moments of disagreement, uncertainty, or unsuccessful implementation. Assessment development should distinguish academic understanding, ethical judgment, reflective capacity, and students' accounts of spiritual meaning. This would allow subsequent studies to investigate the framework with constructs and evidence appropriate to each claim.

CONCLUSION

This study identifies spiritual integration as a coherent orientation connecting the purposes of learning, intellectual inquiry, ethical relationships, and reflective judgment. Drawing on Seyyed Hossein Nasr's *Knowledge and the Sacred*, the analysis develops four educational principles: the unity of knowledge and spirituality, holistic human formation, moral responsibility associated with knowledge, and reflective awareness of meaning. These principles inform seven interconnected PjBL processes: project selection, planning, investigation, collaboration, implementation, evaluation, and reflection. The resulting framework challenges the assumption that religious subject matter or active participation alone adequately establishes spiritual integration. It highlights how spiritual commitments shape decisions throughout a project and opens further discussion of the relationship between sacred epistemology, learner agency, and educational purposes.

The study contributes a conceptual framework that explains how Nasr's philosophical arguments can inform contemporary pedagogical design. It extends previous scholarship on spiritual formation and PjBL by articulating the interpretive connections among sacred knowledge, educational principles, project activities, and anticipated outcomes. It also qualifies claims that equate ethical conduct or successful project completion with spiritual development by distinguishing observable educational expressions from learners' personal interpretations of transcendent meaning. This distinction enriches the discussion of spiritual integration and provides a basis for designing learning activities and assessment criteria appropriate to intellectual understanding, moral responsibility, and reflective awareness.

The study is limited by its reliance on a selected philosophical text and an interpretive synthesis of educational literature. Its conclusions depend on the reading of Nasr developed here, while alternative interpretations may yield different principles or reveal further tensions with PjBL. The framework's feasibility and educational effects therefore require empirical examination across varied learner groups, disciplines, and institutional settings. Future research should

employ classroom case studies and design-based research to refine its implementation, followed by broader investigations using clearly differentiated measures of academic learning, ethical judgment, reflective capacity, and spiritual awareness. Teachers seeking to apply the framework should establish explicit objectives, support open inquiry, and evaluate evidence appropriate to each intended outcome.

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REFERENCES

Abduh, M., & Kerwanto. (2023). Relevansi pemikiran Seyyed Hossein Nasr tentang integrasi Islam dan sains terhadap pendidikan Islam di Indonesia. *EDUMULYA: Jurnal Pendidikan Agama Islam, 1*(2), 8–24. https://doi.org/10.59166/edumulya.v1i2.105

Adiningsih, R. P., Muthohirin, N., & Humaidi, M. N. (2023). Analysis of students' spiritual humanism through Seyyed Hossein Nasr's thoughts and its implications for Islamic learning. *Al-Tadzkiyyah: Jurnal Pendidikan Islam, 14*(2), 231–255. https://doi.org/10.24042/002023141940900

Afifah, N. (2015). Peranan pendidikan spiritual/spiritual quotient (SQ) dalam membangun karakter bangsa. In *Seminar nasional "Pembangunan karakter melalui pendidikan dan pembelajaran"* (pp. 183–188).

Afifah, S. N. (2024). Integrasi teori belajar dan nilai Islam dalam pendidikan modern: Konvergensi untuk pembelajaran efektif. *Epistemic: Jurnal Ilmiah Pendidikan, 3*(2), 242–257. https://doi.org/10.70287/epistemic.v3i2.8

Arifin, S., Amini, S., & Saputro, A. D. (2022). Reconstruction of Islamic religious education Seyyed Hossein Nasr's perspective. *Istawa: Jurnal Pendidikan Islam, 7*(1), 46–57. https://doi.org/10.24269/ijpi.v7i1.5190

Azizah, A. N. I., Hidayatulloh, A., Apriliana, A. R., Rosyida, A., Rahmat, B., Aziz, F. A., Rivai, F. K., Azzahro, F. U., Az Zahra, F., Azzahra, L. A. A., Fajar, M., Ardiana, M., Kamila, M. T., Rosidah, M., Putri, N. M., Salsabila, S. S., & Purnama, Y. N. (2023). *Ilmu pendidikan Islam: Menuntun arah pendidikan Islam Indonesia*. Tahta Media Group. https://tahtamedia.co.id/index.php/issj/article/view/390

Azmi, M. U., Ulla, F., Islam, M. T., Mushaffa, A., Junaris, I., & Angrheini, N. H. (2025). Hubungan konformitas dengan kepatuhan santri terhadap peraturan Pondok Pesantren al-Fath Kota Kediri. *Al Asma: Journal of Islamic Education, 7*(2), 284–297. https://doi.org/10.24252/asma.v7i2.60061

Basith, Y., Bahri, S., & Setiawan, D. (2024). Contextualizing Nasr's Sufism in education in the modern era. *Jurnal Pendidikan Islam Indonesia, 9*(1), 51–60. https://doi.org/10.35316/jpii.v9i1.619

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

Braun, V., & Clarke, V. (2024). Supporting best practice in reflexive thematic analysis reporting in *Palliative Medicine*: A review of published research and introduction to the Reflexive Thematic Analysis Reporting Guidelines (RTARG). *Palliative Medicine, 38*(6), 608–616. https://doi.org/10.1177/02692163241234800

Cahyono, P. R., El Syam, R. S., & Hidayat, M. S. (2026). Project-based learning for spiritual competence in Islamic religious education. *Urwatul Wutsqo: Jurnal Studi Kependidikan dan Keislaman, 15*(1), 151–160. https://doi.org/10.54437/urwatulwutsqo.v15i01.2705

Darda, A. (2015). Integrasi ilmu dan agama: Perkembangan konseptual di Indonesia. *At-Ta'dib, 10*(1), 33–46. https://doi.org/10.21111/at-tadib.v10i1.323

Guo, P., Saab, N., Post, L. S., & Admiraal, W. (2020). A review of project-based learning in higher education: Student outcomes and measures. *International Journal of Educational Research, 102*, Article 101586. https://doi.org/10.1016/j.ijer.2020.101586

Hadi, A., Anim, S., & Yasin, H. (2024). Integration of Islamic principles and modern educational theories in Islamic education. *QALAMUNA: Jurnal Pendidikan, Sosial, dan Agama, 16*(2), 1385–1398. https://doi.org/10.37680/qalamuna.v16i2.6105

Harahap, A., & Darmana, A. (2020). Pembelajaran PBL menggunakan bahan ajar terintegrasi nilai spiritual untuk meningkatkan hasil belajar dan sikap spiritual. *Jurnal Inovasi Pembelajaran Kimia, 2*(2), 64–70. https://doi.org/10.24114/jipk.v2i2.19393

Ihsan, N. H., & Islam, M. T. (2023). Nūr Muḥammad in the perspective of the Tijaniyah tarekat. *Kanz Philosophia: A Journal for Islamic Philosophy and Mysticism, 9*(1), 23–42. https://doi.org/10.20871/kpjipm.v9i1.249

Irawan, D. (2019). Tasawuf sebagai solusi krisis manusia modern: Analisis pemikiran Seyyed Hossein Nasr. *Tasfiyah: Jurnal Pemikiran Islam, 3*(1), 41–66. https://doi.org/10.21111/tasfiyah.v3i1.2981

Islam, M. T., & Nasution, K. (2024). The meaning of suhbah Tijaniyah tariqa in building adab. *Al-Hayat: Journal of Islamic Education, 8*(2), 421–432. https://doi.org/10.35723/ajie.v8i2.450

Jaakkola, E. (2020). Designing conceptual articles: Four approaches. *AMS Review, 10*(1–2), 18–26. https://doi.org/10.1007/s13162-020-00161-0

Khoirudin, A. (2014). Rekonstruksi metafisika Seyyed Hossein Nasr dan pendidikan spiritual. *Afkaruna: Indonesian Interdisciplinary Journal of Islamic Studies, 10*(2), 202–216. https://doi.org/10.18196/aiijis.2014.0038.202-216

Klokočka, J. (2025). Spiritual well-being of pupils and students: A systematic review of current empirical research. *International Journal of Educational Research, 133*, Article 102689. https://doi.org/10.1016/j.ijer.2025.102689

Kokotsaki, D., Menzies, V., & Wiggins, A. (2016). Project-based learning: A review of the literature. *Improving Schools, 19*(3), 267–277. https://doi.org/10.1177/1365480216659733

Kusumawati, I., & Nurfuadi. (2024). Integrasi kurikulum pesantren dalam kurikulum nasional pada pondok pesantren modern. *Sanskara Pendidikan dan Pengajaran, 2*(1), 1–7. https://doi.org/10.58812/spp.v2i01.293

Masykur, Z. M., Ni'am, S., & Naim, N. (2023). Scientia sacra Seyyed Hossein Nasr perspektif filsafat lingkungan dan kontribusinya pada pengembangan kajian ekologis. *Substantia: Jurnal Ilmu-Ilmu Ushuluddin, 25*(2), 166–183. https://jurnal.ar-raniry.ac.id/index.php/substantia/article/view/20121

Mushaffa, A., Azmi, M. U., Islam, M. T., Khilwa, A. R. L., & Azizah, F. N. (2026). Pemikiran KH. Maimoen Zubair tentang Islam Nusantara serta implementasinya dalam pendidikan pesantren. *Musala: Jurnal Pesantren dan Kebudayaan Islam Nusantara, 5*(2), 167–196. https://doi.org/10.37252/jpkin.v5i2.2448

Nasr, S. H. (1989). *Knowledge and the sacred*. State University of New York Press.

Nasr, S. H. (2001). *Science and civilization in Islam*. ABC International Group.

Nasr, S. H., & Leaman, O. (Eds.). (2003). *Ensiklopedi tematis filsafat Islam: Buku pertama* (Tim Penerjemah Mizan, Trans.). Mizan.

Nurdiyanto, Islam, M. T., Al Baqi, S., Novitasari, D., & Azmi, M. U. (2025). Hakikat manusia dan relevansinya dengan pendidikan di era Society 5.0. *Al-Qalam: Jurnal Kajian Islam dan Pendidikan, 17*(1), 143–154. https://doi.org/10.47435/al-qalam.v17i1.3619

Nurhasan, Makmun, S., Zakaria, A. F., Hambali, A., & Suhartini, A. (2026). Integration of Islamic educational theology in project based learning strategies to improve student spirituality. *TADIB: Jurnal Pendidikan Agama Islam, 4*(1), 72–91. https://doi.org/10.69768/jt.v4i1.130

Nurhidayati, T. (2019). Latar belakang pemikiran dan kiprah Seyyed Hossein Nasr. *FALASIFA: Jurnal Studi Keislaman, 10*(2), 132–146. https://doi.org/10.36835/falasifa.v10i2.202

Pepilina, D., Fauzi, Safitri, A., Aminudin S., M. D., & Sari, S. N. (2025). Integration of the STEAM approach based on Islamic values in pesantren education: An exploratory case study grounded in project-based learning and the principles of ta'dib. *Jurnal Pendidikan Islam, 14*(1), 119–128. https://doi.org/10.14421/jpi.2025.141.119-128

Qomar, M. (2022a). *Metode penelitian agama*. Madani.

Qomar, M. (2022b). *Metodologi penelitian kualitatif: Membekali kemampuan membangun teori baru*. Inteligensia Media.

Qomar, M. (2024). *Metode penelitian literatur*. Madani.

Rahman BP, A., Munandar, S. A., Fitriani, A., Karlina, Y., & Yumriani. (2022). Pengertian pendidikan, ilmu pendidikan dan unsur-unsur pendidikan. *AL-URWATUL WUTSQA: Kajian Pendidikan Islam, 2*(1), 1–8. https://journal.unismuh.ac.id/index.php/alurwatul/article/view/7757

Risno, S. J. (2023, May 26). *Contoh masalah sosial di sekolah, lengkap dengan pengertian dan cirinya*. Brilio.net. https://www.brilio.net/ragam/contoh-masalah-sosial-di-sekolah-lengkap-dengan-pengertian-dan-cirinya-230526v.html

Shamshiri, B., Rahimian, S., & Tajali Ardekani, H. A. (2020). The study of spiritual education in Seyyed Hosein Nasrs' works and comparing it with some current definitions. *Al-Shajarah Journal of the International Institute of Islamic Thought and Civilization (ISTAC), 25*(1), 107–126. https://doi.org/10.31436/shajarah.v25i1.672

Sofiyana, R. A., Triwahyuni, E., & Muis, A. (2024). The influence of the project-based learning (PjBL) model based on differentiated strategies on students spiritual intelligence. *Jurnal Penelitian Pendidikan IPA, 10*(9), 6434–6441. https://doi.org/10.29303/jppipa.v10i9.8828

Wijnia, L., Noordzij, G., Arends, L. R., Rikers, R. M. J. P., & Loyens, S. M. M. (2024). The effects of problem-based, project-based, and case-based learning on students' motivation: A meta-analysis. *Educational Psychology Review, 36*, Article 29. https://doi.org/10.1007/s10648-024-09864-3

Yuyung, A., Arismunandar, Suardi, Lutfi, & Jusman. (2024). Integration of science and religion learning approaches in the context of modern education. *Journal on Education, 7*(1), 6987–6992. https://jonedu.org/index.php/joe/article/view/7371

Zhang, L., & Ma, Y. (2023). A study of the impact of project-based learning on student learning effects: A meta-analysis study. *Frontiers in Psychology, 14*, Article 1202728. https://doi.org/10.3389/fpsyg.2023.1202728