



Education as an Engine of National Development in the Industry 5.0 Era: A Critical Conceptual Framework for Arabic Language Education in Indonesian Islamic Higher Education

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Abstract

Policy discourse on Industry 5.0 and Society 5.0 presents education as an engine of national development, yet the argument is often reduced to supplying skilled labour. This conceptual article asks how Arabic language education in Indonesian Islamic higher education can respond to this discourse without becoming merely instrumental. Using a critical policy-reading approach, it brings together human capital theory, the capability approach, Biesta's three functions of education (qualification, socialisation and subjectification) and the Islamic educational concept of *ta'dib*. Selected policy documents and scholarship were read purposively; no systematic search was conducted and no field data were collected. The article proposes a three-lens framework, an alignment of six policy themes with human-centric and heritage-based readings, and a policy-practice gap matrix whose scenarios are constructed for illustration and are not data. It derives four testable propositions and identifies risks, including technological determinism, labour-market reductionism, symbolic compliance and nostalgic readings of the Islamic heritage. The framework is a hypothesis for later empirical studies, such as comparative case studies of Arabic education programmes, and not an established model.

Keywords

Education and national development; Industry 5.0; Human-centric education; Arabic language education; Islamic higher education

مستخلص البحث

تتناول هذه الورقة العلاقة بين التعليم والتنمية الوطنية في ضوء الثورة الصناعية الخامسة، وتسأل كيف يمكن لتعليم اللغة العربية في التعليم العالي الإسلامي بإندونيسيا أن يستجيب لخطاب التنمية دون أن يصبح تعليمًا نفعيًا محضًا. واعتمد البحث التحليل المفهومي النقدي لوثائق سياسية مختارة وأدبيات نظرية، منها نظرية رأس المال البشري ومنهج القدرات وتصور بيستا لوظائف التعليم الثلاث ومفهوم التأديب في الفكر التربوي الإسلامي، ولم تُجمع بيانات ميدانية. وتقدم الورقة إطارًا ثلاثي العدسات ومصفوفة لفجوة السياسة والممارسة تتضمن سيناريوهات توضيحية من صنع الباحث وليست بيانات، كما تستخلص أربع قضايا قابلة للاختبار وتحدد مخاطر منها الحتمية التقنية والاختزال في سوق العمل والامتثال الشكلي. وتبقى النتائج تصورية تحتاج إلى اختبار تجريبي في دراسات حالة مقارنة لبرامج تعليم اللغة العربية.

التعليم والتنمية الوطنية: الثورة الصناعية الخامسة؛ التعليم المرتكز على الإنسان؛

تعليم اللغة العربية؛ التعليم العالي الإسلامي

كلمات أساسية

1. Introduction

1.1. Background and significance

Development planning in Indonesia treats education as a central means of reaching the long-term vision for 2045 (Republik Indonesia, 2024). The same expectation runs through the wider discourse on the fourth and fifth industrial revolutions: schools and universities are asked to produce graduates who can work with digital technology, adapt to rapid change and raise national productivity. Industry 5.0 entered European policy as a complement to Industry 4.0 that places the wellbeing of people, sustainability and resilience at the centre of technological change (Breque et al., 2021; Nahavandi, 2019). Society 5.0, proposed in Japan, describes a human-centred society in which economic development and the solution of social problems are pursued together by integrating cyberspace and physical space (Fukuyama, 2018; Cabinet Office, Government of Japan, 2016). Read literally, both ideas are humanistic. In education policy, however, they are often translated into lists of skills, platforms and employability targets.

This translation matters for Arabic language education in Indonesian Islamic higher education. Arabic programmes in state and private Islamic universities prepare teachers, translators, researchers and community educators, and they also keep open the learner's access to the Islamic intellectual heritage (*turats*). They work under national higher education policy and under the policies of the Ministry of Religious Affairs, which include the Arabic curriculum for madrasahs (Kementerian Agama Republik Indonesia, 2019). When a development narrative asks every programme to demonstrate its contribution to the labour market, Arabic programmes face a double question: what do their graduates contribute to national development, and what is education for in the first place? The second question is the one this article takes up.

1.2. Previous scholarship

Three strands of scholarship frame the problem. The first concerns education and development. Human capital theory presents schooling as an investment that raises individual and national productivity (Schultz, 1961; Becker, 1964). The capability approach shifts the question from what education produces to what people are able to do and to be, and treats development as the expansion of substantive freedoms (Sen, 1999; Robeyns, 2005). Nussbaum (2010) warns that education designed mainly for economic growth neglects the capacities that democratic citizenship needs, and UNESCO (2021) calls for a new social contract for education that treats it as a common good.

The second strand is critical scholarship on educational purpose and technology. Biesta (2009) argues that an age of measurement has displaced the question of purpose, and distinguishes three functions of education: qualification, socialisation and subjectification. Ball (2012) traces how global policy networks carry market-oriented ideas into national education systems, and Freire (1970) criticised the 'banking' model in which learners are treated as containers. On technology, accounts of artificial intelligence in education describe promises and implications for teaching (Holmes et al., 2019), while critical reviews caution against technological determinism and against the assumption that machines can replace the relational work of teachers (Williamson & Eynon, 2020; Selwyn, 2019).

The third strand is Islamic educational thought and its Indonesian setting. Al-Attas (1980) argued that the Islamic concept of education is *ta'dib*, the instilling of *adab*, and not training

alone. Al-Zarnuji's manual for students stresses intention, respect for knowledge and teachers, and gradual progress (Al-Zarnuji, 1947). Indonesian scholars have proposed ways of connecting Islamic and modern knowledge without collapsing them (Abdullah, 2006; Kartanegara, 2005; Kuntowijoyo, 2006), and Madjid (1987) links Islamic commitment, modernity and Indonesian identity. Studies of Islamic education in Southeast Asia show that institutions have long adapted to modern schooling and to new conditions (Hefner, 2009; Hanafi et al., 2021).

1.3. Gap and distinct contribution

Each strand, taken alone, leaves a gap. Development theory says much about what education should achieve but little about how a particular subject, such as Arabic, should be justified in a development narrative. Critical scholarship names the danger of instrumentalism but rarely works through a language programme in a religious university. Islamic educational thought offers a rich account of purpose but is seldom set against the vocabulary of Industry 5.0 and national development planning. In the sources read for this article, research on Arabic language education in Indonesia concentrates mainly on methods, media and materials, including the author's own earlier work on learning management systems, mobile applications and animated video (Fauzi & Anindiati, 2019, 2020, 2021; Fauzi et al., 2020; Salahuddin et al., 2021), while the link between policy discourse and programme purpose is less often theorised; this impression comes from a purposive reading and not from a systematic review. The distinct contribution of this article is to bring the three strands together in a framework that Arabic programmes can use to read policy critically and to locate where policy and practice may diverge.

1.4. Research objective and contribution

The objective is conceptual: to develop a critical framework for reading the Industry 5.0 development discourse from the standpoint of Arabic language education in Indonesian Islamic higher education. The contribution is fourfold: (a) a three-lens framework that combines developmental, human-centric and formative readings of education (Figure 2); (b) an alignment of six policy themes with human-centric and heritage-based readings (Table 1); (c) a policy–practice gap matrix with constructed illustrative scenarios (Table 2); and (d) four propositions that later empirical studies can test.

1.5. Research questions and article organization

Research questions: (RQ1) How does the Industry 5.0 and Society 5.0 policy discourse position education as a driver of national development, and what assumptions about the purpose of education does it carry? (RQ2) What framework allows Arabic language education to read this discourse critically without reducing the subject to a supplier of skills? (RQ3) Which risks, policy–practice gaps and testable propositions follow?

Section 2 explains the conceptual method and the status of the illustrative scenarios. Section 3 presents the framework, the alignment table, the gap matrix and the propositions. Section 4 discusses implications and tensions, Section 5 states strengths and limits, and Section 6 concludes.

2. Methods

2.1. Conceptual design and analytic stance

The study is a conceptual and critical analysis in the tradition of philosophy of education and critical policy analysis. It does not test a hypothesis; it clarifies concepts, examines the assumptions that policy discourses carry and derives propositions. Three commitments guide the work. First, policy discourses embed claims about what education is for, and these claims can be made visible and examined (Biesta, 2009; Ball, 2012). Second, the lenses used here are treated as complementary and not as rivals. Human capital theory and the capability approach answer different questions, and a programme can take both seriously, for example by caring about graduates' employability and about what they are able to do and to be (Sen, 1999; Robeyns, 2005). Third, integration with Islamic educational thought is understood as disciplined dialogue and not as the relabelling of modern constructs in Islamic vocabulary, a distinction that resonates with Kuntowijoyo's (2006) preference for the scientification of Islam over reactive Islamization.

2.2. Sources and selection of texts

The corpus is purposive and small. Policy sources were limited to the national education law (Republik Indonesia, 2003), the national long-term development plan for 2025–2045 (Republik Indonesia, 2024) and the madrasah curriculum decision for Arabic (Kementerian Agama Republik Indonesia, 2019), together with international statements on human-centred technology and education (Breque et al., 2021; Fukuyama, 2018; UNESCO, 2021). These documents were read for their general orientation and were not coded line by line. Because ministerial structures and regulations in Indonesia have changed in recent years, readers should check the current texts before relying on any document cited here. Scholarly sources were chosen for their conceptual centrality in the three strands, and the *turats* source is read in translation (Al-Zarnuji, 1947). No systematic database search was run, so the selection illustrates the argument and makes no claim to represent the field.

2.3. Analytic procedure

Analysis proceeded in four steps. (1) Theme extraction: recurring themes in the policy and international sources were identified, namely human resource quality, digital transformation, flexible and collaborative learning, inclusion and equity, values and character, and educator professionalism. (2) Purpose classification: each theme was read for the function of education it emphasises, using Biesta's (2009) qualification, socialisation and subjectification as a heuristic, and for the lens that best explains it (developmental, human-centric or formative). (3) Critical reading: each theme was examined for instrumental assumptions, for example that education is justified mainly by its contribution to the labour market or that technology adoption is itself an educational aim. (4) Translation: the themes were related to Arabic programmes, a policy–practice gap matrix was drafted, and propositions were derived.

2.4. Status of the illustrative analysis

The scenarios in Table 2 were written by the author to reflect situations that the literature on policy implementation and educational technology makes plausible for Arabic programmes. They are not data. They were not collected from institutions or participants, carry no frequency information and cannot be used to estimate how common any situation is. No participants were involved, so ethical review was not required. Figure 1 summarises the analytic design.

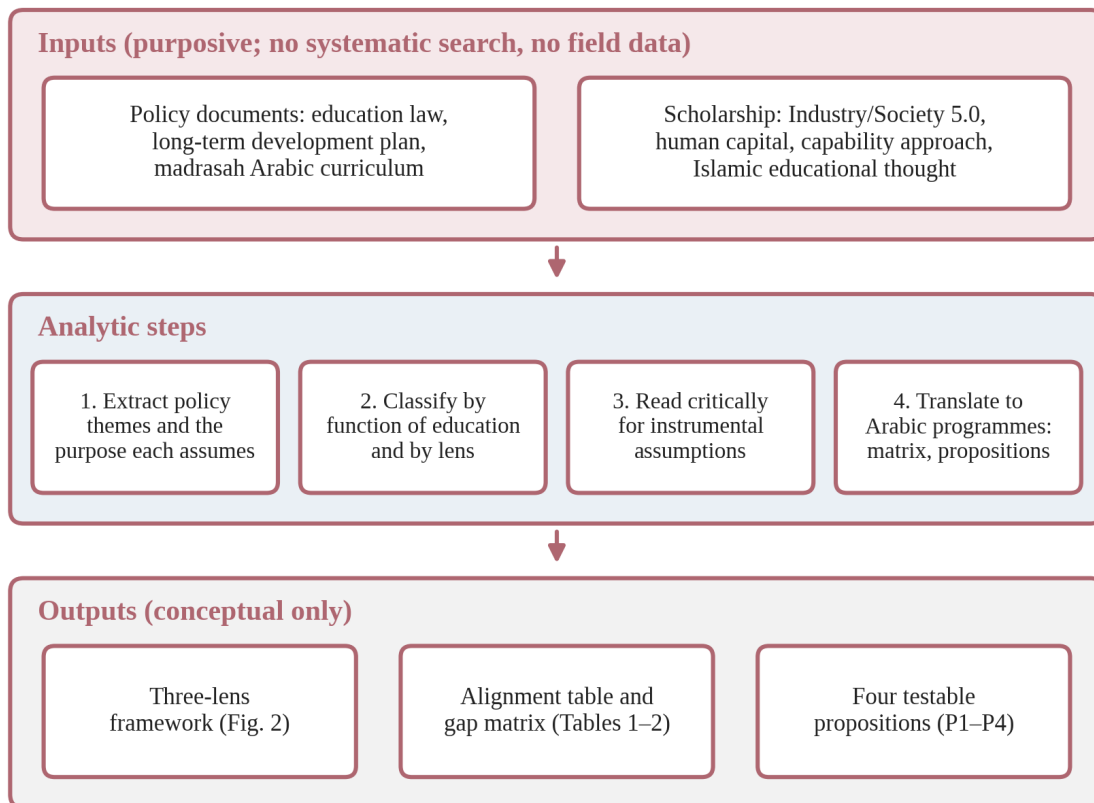


Figure 1. Analytic design of the conceptual study. Boxes show analytic steps; no empirical data are involved.

3. Results

The analysis yields a framework with three lenses. The developmental lens reads education as investment in the knowledge and skills that national development requires. The human-centric lens asks what learners are able to do and to be, and how technology serves human wellbeing, equity and agency. The formative lens, drawn from the Islamic concept of *ta'dib*, asks how education forms intention, character and relation to knowledge. Figure 2 relates the lenses to Biesta's three functions of education and to the stakes they raise for Arabic language education. The framework is a set of hypotheses derived from conceptual analysis; it has not been tested.

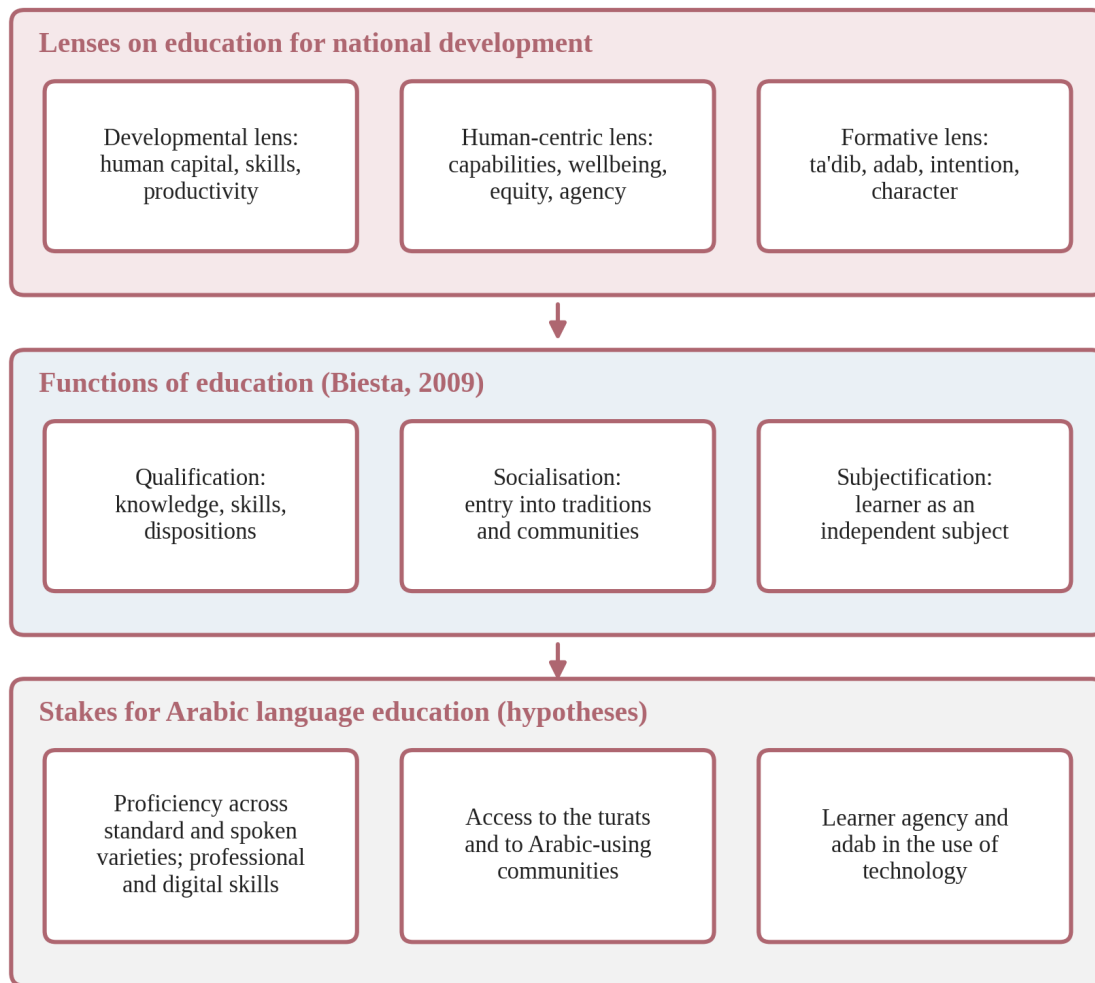


Figure 2. Author-developed framework: three lenses, three functions of education and the stakes for Arabic language education. The stakes are hypotheses.

Table 1 reads six policy themes through the three lenses. The pairing is functional and not genealogical: it does not claim that classical sources anticipated current policy, only that they speak to the same problem. Where a theme is vulnerable to an instrumental reading, the table states the human-centric reading that corrects it.

Table 1. Alignment of policy themes with human-centric and heritage-based readings

Policy theme	Policy discourse	Human-centric reading	Heritage anchor	Implication for Arabic programmes
Human resource quality	Education as investment in skilled people for the 2045 vision (Republik Indonesia, 2024; Schultz, 1961)	What graduates are able to do and to be, not only credentials (Sen, 1999; Robeyns, 2005)	Knowledge joined with character through <i>ta'dib</i> (Al-Attas, 1980)	Graduate profile states proficiency, professional skills and character outcomes together
Digital transformation	Digital competence and technology-enabled learning (Holmes et al., 2019)	Technology serves human purposes and learner agency (Breque et al., 2021; Selwyn, 2019)	Intention (<i>niyyah</i>) and respect for knowledge as conditions of learning (Al-Zarnuji, 1947)	Each tool has a stated pedagogical rationale; guidance on AI use in language tasks

Policy theme	Policy discourse	Human-centric reading	Heritage anchor	Implication for Arabic programmes
Flexible and collaborative learning	Learning beyond the classroom; collaboration between people and technology (Fukuyama, 2018)	Collaboration that widens participation (Nussbaum, 2010)	Study with partners and gradual progress (Al-Zarnuji, 1947; Ibn Khaldun, 1967)	Placements, exchanges and online work designed with scaffolding and fair access
Inclusion and equity	Education as a common good with equitable access (UNESCO, 2021)	Converting resources into real opportunities for diverse learners (Robeyns, 2005)	Compassion in teaching and attention to the learner's stage (Ibn Khaldun, 1967)	Support for learners from different school and pesantren backgrounds
Values and character	National aims of faith, piety and noble character (Republik Indonesia, 2003)	Subjectification: learners as independent subjects (Biesta, 2009)	<i>Adab</i> and <i>ta'dib</i> (Al-Attas, 1980; Dhofier, 1982)	Values appear in assessment criteria, with room for questioning
Educator professionalism	Training for new competences and technology use (Holmes et al., 2019)	Teaching as relational work that machines do not replace (Selwyn, 2019)	Respect for the teacher joined with the teacher's compassion (Al-Zarnuji, 1947)	Professional development judged by changed practice, not by certificates alone

Themes are paired by function. The table is an author-developed conceptual alignment, not an empirical finding.

Table 2 applies the chain shown in Figure 3 to five constructed scenarios. Each row states a situation, the policy-level expectation it relates to, the gap it would illustrate, the lens that explains it and an indicator that a later empirical study could use.

Table 2. Policy–practice gap matrix applied to constructed scenarios (illustration only)

Constructed scenario (not data)	Policy-level expectation	Hypothesised gap	Lens that explains it	Indicator for later study
A programme adds 'digital literacy' to its graduate profile, but no course plan or assessment changes.	Graduates with digital competence	Symbolic compliance: an outcome is stated but not taught or assessed (G2, G3)	Developmental lens	Alignment between outcome statements, course plans and assessment tasks
Students use AI translation and chat tools freely for Arabic assignments; the programme has no guidance.	Technology-enabled learning	Technology replaces language practice and weakens learner agency (G3)	Human-centric lens	Programme guidance on AI use; learner and lecturer accounts of how tools are used
Internship and exchange places go mostly to learners who already have good networks.	Flexible and collaborative learning	Unequal conversion of opportunity into real benefit (G3, G4)	Human-centric lens	Distribution of participation by learner background
The mission statement names <i>adab</i> and character, but rubrics assess only linguistic accuracy.	Values and character	Values stated but not assessed (G2, G3)	Formative lens	Value dimensions in rubrics and feedback; learner accounts

Constructed scenario (not data)	Policy-level expectation	Hypothesised gap	Lens that explains it	Indicator for later study
Lecturer development is recorded as certificates and workload credits.	Educator professionalism	Measurement replaces purpose; no evidence of changed teaching (G4)	Formative and developmental lenses	Documented changes in teaching practice after training

Scenarios were constructed by the author for demonstration. They are not data, and each 'gap' is a hypothesis to be tested against evidence from real programmes.

3.1. Policy discourse and its assumptions about purpose

Policy statements on development and Industry 5.0 usually carry two assumptions. The first is developmental: education is an investment whose value is shown in productivity and employability (Schultz, 1961; Becker, 1964). The second is technological: digital capability is an educational aim in itself. Neither assumption is wrong; each is incomplete. Biesta (2009) argues that when measurement and effectiveness dominate, questions about what education is for, in whose interest and with what consequences for the learner tend to disappear. The Industry 5.0 literature itself points to the same incompleteness by insisting on human wellbeing, sustainability and resilience (Breque et al., 2021; Nahavandi, 2019). This offers an answer to RQ1: the discourse is not instrumental by design, but it is easily read that way when it is translated into targets.

The capability approach and the human capital approach can be held together. Human capital theory explains why societies invest in education; the capability approach asks whether the investment enlarges what people are actually able to do and to be (Sen, 1999; Robeyns, 2005). A programme that cares only about the first risks treating graduates as inputs; one that cares only about the second may neglect the real constraints of the labour market. The framework therefore keeps the developmental lens and adds two others, and does not discard the first.

3.2. Arabic language education through three functions and *ta'dib*

Biesta's three functions give a vocabulary for what Arabic programmes do. Qualification includes proficiency in Arabic, the professional skills of teaching, translation or research, and increasingly the digital skills to work with language tools. Socialisation includes entry into Arabic-using religious and scholarly communities and access to the *turats*, a role long carried by pesantren and madrasahs (Dhofier, 1982; Hefner, 2009). Subjectification concerns the learner as an independent subject who can judge, question and take responsibility. The Islamic concept of *ta'dib* does not map neatly onto any one function; it joins socialisation and subjectification by placing the formation of *adab* at the centre of education (Al-Attas, 1980).

Arabic adds specific stakes. Qualification must deal with the diglossic situation in which standard and spoken varieties coexist (Ferguson, 1959; Versteegh, 2014), and it is a hypothesis worth testing that digital tools designed mainly for standard forms serve learners unevenly across varieties. Earlier work on Arabic learning with learning management systems, mobile applications and video media examined instructional design, learner motivation and vocabulary mastery (Fauzi & Anindiati, 2019, 2021; Fauzi et al., 2020; Salahuddin et al., 2021); the framework adds a further question about the purposes such tools serve and the learner agency they leave. Socialisation raises the question of which Arabic and which texts a programme transmits. Subjectification asks whether learners use technology as agents or only as consumers of its output. These stakes are not claims about what programmes now do; they indicate where empirical attention is needed.

A tension has to be stated. In traditional institutions, respect for the teacher may discourage questioning, whereas human-centric education presumes learners who question and act (Dhofier, 1982; Freire, 1970). The framework reads respect as readiness to receive and not as an obligation to accept without understanding, which is consistent with the weight that Al-Zarnuji (1947) places on intention and on the learner's own effort.

3.3. Policy–practice translation and testable propositions

Policy does not arrive in the classroom intact. Figure 3 shows a chain from national policy to learner outcomes with four points where a gap may open. The interpretation gap (G1) arises when institutions read policy selectively. The translation gap (G2) arises when programme documents restate policy in slogans without curricular change. The enactment gap (G3) separates what is written from what is taught and assessed. The evidence gap (G4) arises when outcomes are measured by proxies, such as certificates or participation counts, that do not show whether learners were actually served.

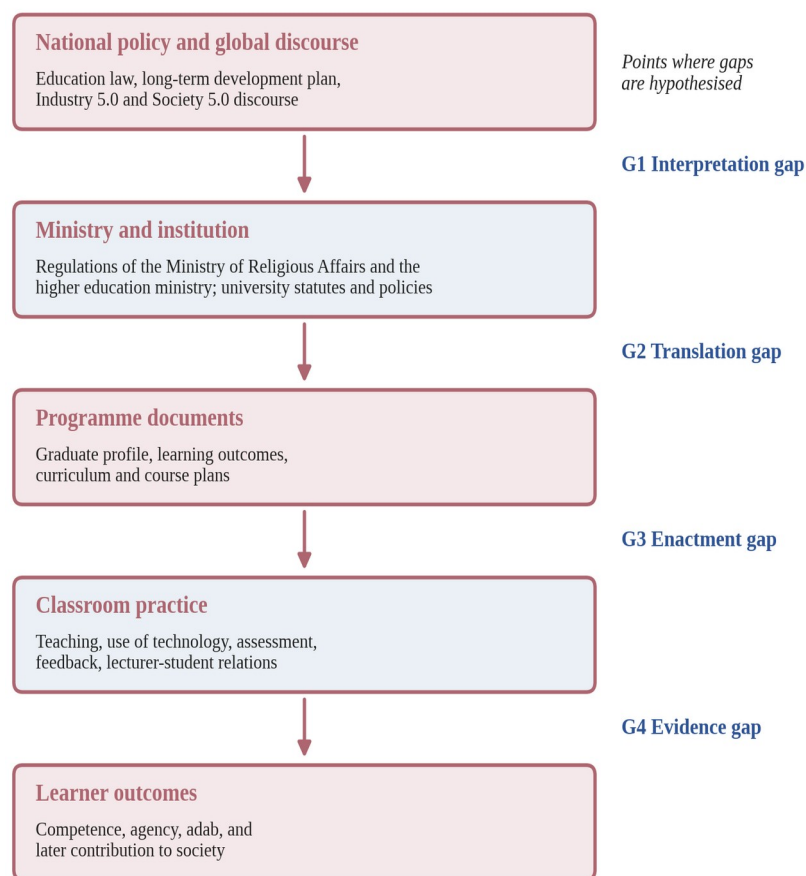


Figure 3. Policy-to-practice translation chain with four points (G1–G4) where gaps are hypothesised. The chain is a design proposal, not an observed process.

Four propositions follow and are offered for testing. P1 (purpose balance): programmes whose graduate profiles state qualification, socialisation and subjectification outcomes will show smaller gaps between stated aims and assessment than programmes whose profiles state only employability outcomes. P2 (technology with purpose): programmes that state a pedagogical rationale for each digital tool will report fewer cases in which technology replaces language practice than programmes that adopt tools without a stated rationale. P3

1104 Fauzi & Kholisin, *Education as an Engine of National Development in the Industry 5.0 Era* (translation loss): policy themes lose specificity at each step of the chain, and the largest loss occurs between programme documents and classroom assessment (G3). P4 (resources and form): programmes with fewer resources will show larger gaps in substance, whereas well-resourced programmes may show symbolic compliance, so institutional type and resources must be examined together.

4. Discussion

4.1. Beyond a human-capital-only reading

A common objection to critical readings of development policy is that they ignore the labour market. The framework does not. Employability remains a legitimate part of qualification, and graduates of Arabic programmes need real prospects as teachers, translators, researchers and community educators. The claim is narrower: employability is a part of the purpose of education and not the whole of it. This position is close to the view that a good education must answer the question of purpose as well as the question of effectiveness (Biesta, 2009), and to Nussbaum's (2010) argument that economic aims should not push out the capacities for critical thinking and citizenship. For Arabic programmes, it also means that the case for the subject should not be reduced to demand for Arabic in the job market, since part of its value lies in access to a tradition and in the formation of learners.

4.2. Integration without relabelling

Integrative proposals in Indonesian Islamic thought emphasise connecting disciplines while keeping them distinct (Abdullah, 2006; Kartanegara, 2005). Applied here, the heritage is not used to decorate policy vocabulary, and modern constructs are not forced into heritage categories. The practical test is whether a programme can say what *ta'dib* changes in its assessment criteria, its use of technology or its feedback, and not only in its mission statement. If it cannot, the vocabulary has been relabelled and nothing has been integrated. Kuntowijoyo's (2006) preference for a proactive scientification of Islam suggests the direction: treat heritage concepts as sources of testable constructs, which is the purpose of the propositions above.

4.3. Risks: determinism, reductionism, symbolic compliance and nostalgia

Four risks deserve attention. The first is technological determinism, the belief that the arrival of a technology dictates what education must become (Selwyn, 2019; Williamson & Eynon, 2020). The second is labour-market reductionism, in which global policy ideas travel into national systems as targets and rankings (Ball, 2012). The third is symbolic compliance, in which the language of human-centred education is adopted without any change in practice; Table 2 and proposition P4 address it. The fourth is nostalgia: the heritage may be invoked as a guarantee of quality simply because it is old, whereas claims about heritage practices must be tested like any other. Hefner (2009) cautions against treating 'traditional' and 'modern' Islamic education as fixed blocks, since institutions have repeatedly adapted.

4.4. Indonesian situatedness

The framework is situated in Indonesia in a modest sense. Arabic is taught in pesantren, madrasahs and state and private Islamic universities that differ in resources, networks and traditions (Dhofier, 1982; Hefner, 2009). Madjid's (1987) insistence that Islamic commitment, modernity and Indonesian identity be considered together offers a vocabulary for this situatedness. Hanafi et al. (2021) show that pesantren leaders responded to the pandemic by adapting their institutions, while support for blended teaching remained limited, which suggests that new practices depend on training and technical support. Because

programmes differ, comparisons between institutional types, for example state and private Islamic universities, are a natural design for testing P4.

4.5. Implications and methodological cautions

For programme leaders, the framework suggests checking whether each stated outcome has a course, an assessment and evidence of learning behind it, and stating a rationale for each digital tool. For policymakers, it suggests that indicators should include evidence of substantive change in teaching and not only participation counts. For researchers, the propositions can be examined in multiple case studies using document analysis, interviews, classroom observation and available secondary data such as tracer studies.

Three cautions apply. Constructs must be operationalised separately: stated aim, resourcing, enacted teaching and assessed outcome are different variables. Perceived readiness is not measured competence, and claims about contributions to national development cannot be drawn from programme-level data alone. And the researcher's position within the community studied should be disclosed, since judging what counts as a 'gap' is itself value-laden.

5. Strengths, Limitations, and Research Integrity

The strengths of the article are a clearly stated stance, an explicit alignment between policy themes and human-centric and heritage-based readings, and propositions that can be falsified. The main limitation is that it contains no empirical data. The sources are purposive and were not drawn from a systematic search, so the framework may reflect the texts the author knows best. Policy documents were read for general orientation and not coded, and policy texts change. The *turats* source is read in translation, and a fuller treatment would engage the Arabic originals. The scenarios in Table 2 are constructed and say nothing about how common any situation is or about any institution.

As for integrity, every example that is not drawn from the cited literature is identified as constructed, no participants were involved and no results are reported. Readers should consult the full texts of the sources before relying on them for detail. The author works within the Indonesian Arabic-education community whose practices are discussed and has published earlier on digital Arabic learning (Fauzi & Anindiati, 2020; Fauzi et al., 2020), which may shape the attention given to technology here, so the framework reflects a situated perspective that independent readers should examine.

6. Conclusion

Education can be described as an engine of national development without being reduced to a supplier of skilled labour. This article has argued that the Industry 5.0 and Society 5.0 discourse, which is human-centred in intent, should be read through three lenses (developmental, human-centric and formative) and through the three functions of education, and that Arabic language education in Indonesian Islamic higher education has specific stakes in each. The alignment in Table 1 and the gap matrix in Table 2 make the reading usable, and four propositions make it testable. The framework is conceptual and illustrated with constructed scenarios; it should be read as a research agenda for comparative case

1106 Fauzi & Kholisin, *Education as an Engine of National Development in the Industry 5.0 Era* studies of Arabic programmes and not as evidence that any policy or programme improves learning.

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