Practioner's Note
Holistic Education Must Finally Overcome Subject-Area Barriers

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Education reform has focused on academic standards, but curriculum is still weighed down by outdated subject-area categories that are reinforced through various practices and institutions.

This article examines the possibilities for an integrative curriculum model that can accommodate the broad goals of holistic education and the needs of society for well-rounded, creative thinkers and agents of productive change. The paper outlines the argument for integration, providing some tools and practical suggestions for a working model and research support to aid educators in achieving holistic education.

Decades of education reform movements have focused on academic standards, closing the gap between state-of-the-art research and school curriculum, representing diverse human societies and religious literacy. Despite these efforts, curriculum is still weighed down by outdated subject-area categories that are reinforced through grading, testing, and teacher training.

Holistic education cannot advance without overcoming these constraints. Little research has been done on how to weave holistic goals into

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Douglass, S.L. (2022). Holistic Education Must Finally Overcome Subject-Area Barriers. *Journal of Education in Muslim Societies, 3*(2), 100–113. DOI 10.2979/jems.3.2.07 •

the existing curriculum, because models for education reform have been additive, saddling reformers with more mandates rather than incorporating reforms into existing content and skills. This article examines the possibilities for rethinking school subjects within an integrative model that can accommodate the goals of holistic education and society's need for creative thinkers. The central argument for interdisciplinary learning is urgent: No current global problem can be solved by one disciplinary field alone, and students must learn to think across disciplines. For example, climate change is a vastly complex problem that requires many disciplines from the natural and social sciences. Interdisciplinary thinking requires exposure to interdisciplinary studies from the early years, along with exposure to ethical principles and empathy.

COMpArtMEnt AlizEd SECulAr/rEligiOuS CurriCulum

Curriculum development in mass education has divided required knowledge and skills into school subjects. Academic standards development, textbooks, and teacher training keep these subjects in separate silos. In the 19th century, institutions that provided elementary religious education, such as parish schools, kuttab schools, and their counterparts in other traditions, were pressed into service to build capacity to spread a network of local schools across nations. Religious institutions, fearing loss of relevance in their societies, embraced the possibility of receiving government funds, with the requirement that they include secular school subjects (Douglass, n.d., p. 24; n27–29). The resulting curricula followed ministry of education mandates for approved textbooks and school inspection regimes. No thought was given to integrated or holistic learning. A progressive tradition emerged in some places, notably among nonconformists and scientific innovators who fostered a vision of hands-on learning, experimentation, and aesthetic experiences for their children (Simon, 1981). This progressive tradition persisted into the twentieth century in various forms, including the Froebisher model for kindergarten, Maria Montessori's model of schooling, and others still operative today in private education. Many such models advocate interweaving school subjects, and some of this thinking has seeped into public education but is far from widespread.

Religion as a school subject has been taught within confessional models (in some European and most Muslim countries) and in nonconfessional models in U.S. public education (with reference to constitutional guidelines for the academic study of religion in public schools). Even in countries where religion is taught in confessional modes, the subject is streamlined

and often limited in its spiritual content. Gregory Starrett has usefully referred to national religious curriculum as having undergone a process of functionalization, that is, transforming the tradition into "socially and politically useful forms for use in the public school" (Starrett, 2010). Eleanor Doumato and Gregory Starrett elaborated on these points in their book on Saudi textbooks, contrasting the manner in which Islamic values were deployed in religious studies with its coverage in civics courses (Doumato & Starrett, 2006). In Irish village schools, based on the parish system, schools were equipped with a two-sided sign stating, "This side to be displayed during Religious/Secular instruction." Such a compartmentalized model is not overt today, but it lurks invisibly behind mass education systems with government funding.

In private Islamic schools in the West, Muslim communities and institutions strive to prepare students for global citizenship, higher education, and assuming an Islamic identity. Sufia Azmat, Executive Director of the Council on Islamic Schools in North America, in her study of mission statements published by Islamic schools, identifies predominant themes of academic excellence, spiritual development, civic responsibility, leadership, and a nurturing Islamic environment (Azmat, 2020). A holistic elaboration of mission would be to prepare students for a life of engagement and service to society based on service to the Creator, to internalize Islamic values and cultivate the desire to learn, to recognize knowledge as a whole, and to integrate Islamic knowledge with nationally recognized academic standards and scholarship. Acquisition of knowledge and the ability to question constructively and think critically are at the forefront of Islamic societal and personal mandates. Islamic education should be viewed as a seamless process that intertwines the "sacred" and "secular," rather than separating them. Few schools, however, have lived up to this vision, despite broad agreement about such goals. This goal is quite distinct from simply infusing Islam across the curriculum.

Vincent Cornell puts forth an Islamic model of pedagogy that can resolve the barrier between the secular and sacred curricula, at the same time encouraging integration among subject-area divisions, especially between science and religion:

> [Islamic education is] participatory learning based in interleaved reading of the scripture and the created, lived world. It teaches humans about the nature of Divine Reality. . . .
>
> The world is a book to be studied and learned by the person of knowledge. Both the scripture and the world are two registers of divine discourse—the texts of the Arabic Qur'an and the natural world (Cornell, 2013)

Abdullah Şahin emphasized the importance of participatory learning in his study among young adults of the outcomes of various forms of full-time and part-time Islamic schooling. Formation of a stable Islamic identity, he found, was dependent upon the degree to which students had experienced exploratory, participatory education about Islam, as opposed to foreclosed pedagogies in which teachers were intolerant of questioning Islamic precepts and interpretations. (Sahin, 2013). Relevancy to their lives and worldviews was an important factor in students' ability to sustain a constructive, well-adjusted Islamic identity that integrates Islam into their lives. Şahin's study calls for re-training Muslim educators in participatory, holistic pedagogy modeled on the Qur'an and the prophetic example. Classical Muslim philosophers such as Miskawayh, Ghazali, Al-Farabi, and Ibn Sina advocated a pedagogy-centered upon cultivation of spiritual and moral awareness. Thirteenth-century scholar Burhan al-Din al-Zarnuji advocated knowledge as a means for advancement and the perfection of the individual and the society. He maintains that Islamic knowledge consists in any field of knowledge that is essential for the well-being of the Muslim society, whether scientific or rational, making these fields an "obligation of sufficiency," or *fard kifāyah*." Furthermore, this concept calls for Muslims to integrate the two types of knowledge, that is, rational sciences and religious values (Huda et al., 2016). None of these goals emphasized by classical Islamic thinkers are furthered by a pedagogy of disconnected school subjects.

WHAt iS KEEpng Mu Sli M Edu CAti On Fr OM rEA lizing int Egr At Ed lEA rning ?

In both Muslim majority countries and private Muslim schools in Western countries, Islamic schools have mired themselves in the educational mandates of states based on the mass education template. They plan as if they have a "double curriculum" that is both secular and Islamic. Most teach each subject out of a textbook or list of standards. In many Muslim-majority societies, curriculum is dictated by centralized ministries, with schools' ability to operate legally or with accreditation curtailed if they do not adhere. Muslim schools in Western countries that receive government subsidies are often similarly constrained in ways that discourage systematically integrating school subjects.

Private school administrators in the United States work under no such constraints. They are accredited by voluntary associations, in a self-study

process that allows the latitude to innovate. To achieve accreditation, the school officials produce a self-study that states its goals and documents its progress toward meeting these goals.

There are two main obstacles to Muslim schools embracing integrated curriculum. One is the sense that tuition-paying parents wish to adhere closely to "mainstream" (often meaning local or state) curriculum as the best way to prepare students for college admittance. Parents are viewed as content to be able to include Islamic knowledge alongside a secular education. This constraint is illusory, because the most prestigious private schools in the United States would never embarrass themselves before tuition-paying parents by advertising adherence to public (government) mass education standards. If such an imaginary consensus of Islamic school parents requires adherence to a local public school curriculum, then the school must educate the parents otherwise. The second obstacle is the failure to research their local and state curriculum in comparison with others. In the current politicized environment, some "conservative" state legislatures are passing laws to prohibit academically advanced models of education in history, science, and other fields, limiting critical thinking that seems to foster "liberal" views. The most significant obstacle to integrated curriculum—which could be alleviated by institutional support and funding—is that Muslim schools lack expertise in curriculum development and fail to devote time or resources to curriculum development.

Integrated curriculum development that fuses school subject areas is a challenging, complex undertaking that requires sustained effort, teacher education, and empowerment. The entire school administration needs to support the effort on an ongoing basis. Across Muslim schools, this endeavor requires guidance and research funding if it is to come to fruition and to be widely shared.

WHAt Strid ES HAvE BEEn MAd E, And WHAt iS nEE d Ed?

The above assessment is too harsh in one important aspect: Muslim educators—mostly as individuals—are working toward integrating curriculum as best they can. As identified in Azmat's study of Islamic school mission statements, cultivation of a safe, supportive learning environment for Muslim students already aids in formation of an Islamic identity in contrast to mainstream schools. Many Muslim schools engage in service learning, interfaith activities, and observe rituals and holidays. Many also express the need to infuse Islam into the curriculum wherever possible.

Infusion of Islamic content and values into school subjects still leaves the subjects largely isolated in silos, whereas cross-curricular integration seeks to make wider connections across the disciplines in the sense of Vincent Cornell's "interleaved reading of the scripture and the created, lived world" (Cornell, 2013). For example, reading and writing in schools should not be an isolated subject, but find a niche all over the curriculum, in ways that incorporate all the skill sets from media literacy to critical thinking and self-expression. Science and history/social science too often come up short in the weekly schedule of Muslim schools, when in fact, they should be taught in an integrated manner that brings the humanities and study of the natural world into harmony. Instructional time can be saved when related subjects are integrated. Earth science and geography is but one example, in which both subjects are related to Islamic custodianship of the environment, and media literacy skills can help to inform reading on these subjects.

Religious studies courses need to be informed by subjects such as history, social science, and the physical sciences. Islamic history lessons should address the history of Islamic thought through the modern period, with critical study of debates among Muslim scholars today. Infusion and integration with science and social studies should include the ethics of science and its applications, the natural and social science behind environmental protection, and exposure to Islamic ethicists writing about economics and governance. Aesthetics and literary studies come to bear in studying the arts and humanities. A vision of interdisciplinary learning is difficult to achieve in practice. It requires collaboration among scholars and the teachers who write curriculum and plan the granular lessons that deliver such knowledge and pedagogies. Basma Abdelgafar's recent book *Public Policy Beyond Traditional Jurisprudence: A Maqasid Approach* lays out a systems approach to collective decision-making that allows "Muslims [to] actively contribute to the advancement of human welfare in its complex modern forms…[this] demands leading, deep and confident thought in every field of human endeavor" (Abdelgafar, 2018). This kind of broad input into public policy requires educated members of society who have been educated to practice integrated thinking.

How Can Standard Documents Help to Achieve Curricular Integration?

Tools for creating integrated curriculum are more widely available than ever before. In the past few decades, systematic efforts have been made to identify the disciplinary knowledge and skills objectives required for an

educated person. It is helpful to explore the history of standards-based pedagogy. Academic standards are the outline not of "what the school teaches," but a document that expresses what students are to be able to do in order to demonstrate what they know. Such outlines are broken down by grade level or grade cluster. Such performance-based objectives include descriptive verbs with measurable outcomes, rather than vague terms such as "the student will understand…or appreciate"; rather, the student will *identify*, *assess*, *describe*, *compare*, or *evaluate*. Standards-based curriculum holds the teacher and the school accountable and implies the assessment in its form. The important distinction from earlier forms is that curriculum is reverse engineered. A familiar term in this connection is "backward design," a concept described in the work by Grant Wiggins and Jay McTighe (Wiggins and McTighe, 1999).

Academic standards developed in the 1990s and beyond have been constructed according to this performance-based framework. The federally funded standards movement of the 1990s in the United States produced both national and state standards. It began in the 1980s, emerging out of two somewhat contradictory camps of advocates: a "glass half-empty", and a "glass half-full" camp. The "glass-half-empty" camp emerged from fear that U.S. students are deficient in knowledge, threatening cultural fragmentation of the U.S. population. E. D. Hirsch published on cultural literacy, including a dictionary of knowledge to be acquired by children at various grade levels (Hirsch, 1988). The report *A Nation at Risk,* submitted to President Reagan, viewed with alarm the failing education system through a lens of international competition (United States National Commission on Excellence in Education and USA Research, 2000). Such works culminated in calls for schools and teachers to be held accountable for the inadequacies of the product schools were turning out.

In contrast, the "glass half-full" camp noted that the rapid growth of knowledge production during the second half of the twentieth century was too slowly incorporated into the school curriculum. Scholars in natural sciences, history, and social sciences, such as geographer Christopher (Kit) Salter (Salter & Princeton Educational Testing Service, 1990) and many others, envisioned the possibilities of updating the school curriculum while revamping approaches to delivering that knowledge in a manner that (a) creates greater meaning for students, and (b) integrates skill development as a means to acquiring knowledge and keeping it current in lifetime learning.

Both camps converged in the rush toward the turn of the millennium and became co-participants in the first across-the-board curriculum

overhaul since the post–World War I period. The nationwide project called Goals 2000: Educate America Act was signed into law in March 1994, providing funding to states over a five-year period to support state-level improvement initiatives and award grants to local school districts to develop and implement education improvement plans for all students. Grants were awarded to university centers commissioning national standards in the core disciplines. The result was a remarkable collaboration between leading scholars in the disciplines and teachers representing all of the states in the core school subjects. By 1995, the results were published in hopes that states would adopt them as the basis for revamped academic standards based on performance.

The political reaction was mixed; the United States has a strong tradition of state and local control of education, and together with mistrust of both academia and the federal government, it was unlikely that a national curriculum would be adopted wholesale. With history/social science being the most contentiously contested, many states did indeed make broad use of one or more national standards documents as models for state academic standards (Douglass, 2000).

For purposes of this discussion of how schools can achieve interdisciplinary curriculum integration, however, the resulting National Standards documents in each field provided an excellent and universally available tool for integrating curriculum across the disciplines. The performance standards for skill development were largely replicated across the disciplines. Many of the knowledge standards—especially in natural sciences and history/social science—reframed the disciplines in a manner that emphasized meaningful, conceptual structures rather than recital of facts. The scholars' role in the process was to identify the state of each discipline and generate excitement around new research and approaches, while the participating teachers' role was to apply their knowledge of pedagogy to shape the distribution of content knowledge and skills across the K-12 grade levels. The skills standards were of course similar across the disciplines, and the knowledge standards brought out interdisciplinary linkages.

The result of the national effort was an extensive, publicly accessible menu for integrating the K-12 curriculum. National standards are still available as the searchable *Content Knowledge Standards and Benchmark Database* by Mid-Continent Research for Education and Learning (McREL, n.d.). Related initiatives in science, such as Project 2061 (Project 2061, n.d.) and the *Atlas of Science Literacy,* provided a way of mapping science curriculum that meshes the subdisciplines of science education with

technology and social sciences (*Atlas of Science Literacy,* n.d.). All school subjects can be viewed in the McREL database for correlating skills and knowledge. These roadmaps enormously facilitate the task of systematically integrating the curriculum grade level by grade level, or in grade clusters, such as K–2, 3–5, 6–8, and 9–12, so that matching content can be pulled into alignment within and across adjacent grade levels. Before the national standards, a program of interdisciplinary curriculum integration was impossibly daunting.

Unfortunately, as soon as political objections arose to the adoption of national standards, policy makers did not grant sufficient time for one reform effort to achieve progress before embarking on another. As states began writing new performance-based standards and implementing testing, the federal government under the G. W. Bush administration introduced "No Child Left Behind," which narrowed the emphasis to reading and mathematics (Klein, 2015). The next administration picked up an initiative—the Common Core—which was ironically initiated by state governors in an effort to set national standards to facilitate cost savings on state testing, but only in English and mathematics (Gewertz, 2015).

Despite these twists and turns of policy, the national standards movement did impact teacher training and stimulated promising applications of the new standards approaches, notably in Advanced Placement programs. State standards in social studies were often a watered-down version of national standards, sometimes only retaining the rubrics of the relevant document. Others refer to the full document, but with little of value absorbed from the larger document (Douglass, 2000).

Unfortunately, the unprecedented national effort of the 1990s remained underutilized in terms of its greatest potential—interdisciplinary linkage toward integrating curriculum. This is particularly true of its potential for use as a research tool for Islamic/Muslim schools.

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The point of the above account of standards is to illustrate their potential as a tool for interdisciplinary integration. The U.S. national standards are one of several global efforts toward performance-based curriculum reform of which Muslim educators need to be made aware. Instead, Muslim private schools have made haste to adhere to state standards where they are located, without regard to their quality and fragmentary use of original national models or the inadequate successors such as the Common Core.

Few Muslim educators are even aware of the national models produced in the 1990s and their potential use. To raise such awareness, the Appendix includes a listing of standards-related resources as well as disciplinary frameworks that serve the project of mapping connections across the K-12 curriculum.

Producing an integrated, interdisciplinary curriculum is a task that requires teams of researchers, curriculum writers, teachers, and scholars. It is a daunting but rewarding project that requires vision and commitment by administrators and stakeholders. The most important ingredient is to commit resources and time for planning across the curriculum for multiple years.

Integration as an incremental project can begin by identifying nodes of connection among subjects by researching in knowledge and skills standards documents. This form of integration is based on planning courses for individual grades and drawing together knowledge and skills standards across subject areas. Knowledge standards in history, for example, can be paired with relevant literature in language arts, supported by analytical writing skills in both. Integration cannot be achieved in lockstep because reading and analysis in language arts needs more time than a faster-paced history survey course in world, U.S., or Islamic history. By alternating between longer and shorter literary texts for student reading, however, a school can build upon integration in subsequent years.

In some grades or grade clusters (K–2, 3–5, 6–8), knowledge standards in geography and earth science match almost completely, enabling content and skills acquisition to be deepened rather than superficially duplicated in both subjects. Integration of science and history should go beyond the "famous scientists" sidebars that are common in textbooks. World histories of science can integrate discoveries in science and technology with its transfer among societies. By studying the substance of discoveries such as metallurgy, agriculture, and use of energy sources, the science program gives meaning to the historical achievements, while history lends the human elements of their cultural and environmental impact. Mathematical and astronomical advances in various cultures are examples of such meaningful nodes of integration. Understanding technology and its social impacts requires knowledge from multiple disciplines. A useful tool for integrating the science disciplines is the *Atlas of Science Literacy*, a curriculum-mapping tool that merges multiple disciplinary perspectives on a single topic (*Atlas of Science Literacy*, n.d.).

Muslim schools have long valued infusing Islamic knowledge and values into lesson planning, but such integration needs to go beyond infusion toward systematic exchange of expertise among religious studies and content-area faculty. Islamic studies knowledge can inform lessons on moral and ethical issues in governance, economics, and public policy. Secular mass education has largely neglected the study of ethics, philosophy, logic, and rhetoric, for example. Integration offers content expertise to engage societal issues from a religious perspective, supported by reading literature and primary sources in language arts and writing. Study of the arts can be integrated into both humanities and science curricula. Harvard University's Project Zero and its "Artful Thinking" routines and other materials offer innovative approaches (Project Zero, n.d.). These examples illustrate what integration can achieve.

These examples may seem most applicable to secondary grades, but interdisciplinary integration fosters holistic thinking during the formative primary and elementary years and is easier to achieve. The elementary content load is lighter, and a single classroom teacher can develop interdisciplinary lessons in self-contained classrooms. To begin, teachers can survey content standards for all subjects to locate connections and opportunities and plan integrated lessons. Integrated learning is an ideal platform for acquiring information-gathering and critical-thinking skills through reading, writing, speaking, and listening activities.

Subjects such as mathematics and reading/writing have pedagogies of skill acquisition that must be honored, but opportunities for integration can be built upon over time. Science and social studies are flexible in terms of content arrangement in elementary grades. Researching content standards by grade clusters (K–2, 3–5, 6–8) yields possibilities for integration by pulling content within grade clusters to benefit from teaching shared topics across science and social studies programs. Study of ecosystems and human culture regions on earth is complementary; this may seem obvious, but the legacy of siloed curriculum and textbook development has missed these connections.

The key to achieving integration is for administrators to encourage yearly planning rather than short-term lesson planning, and to facilitate research and brainstorming time for teachers to locate such nodes of connection and turn them into collaborative planning. Project-based learning can form nodes of integration. Curriculum planning requires research into the source documents, creatively using the best national and international models in concert.

Integration is a long-term commitment that begins with visualizing possibilities, followed by research, planning, collaboration, and revision to expand the model. Progress must include recording what has been done to revise and publish the results internally, and then to share integrated learning across schools.

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It is high time we got on with the enterprise. We have shown what has kept us from realizing the proven value of curriculum integration. The excitement and inspiration of successful interdisciplinary teaching on educators and learners is its own reward. It remains for research institutions to give overworked and underfunded district and school administrators the support they need to move the process forward.

Integration, or interdisciplinary education, is not new. Eighty years ago, the National Council of Teachers of English encouraged correlation of related subjects, fusion of subjects called multidisciplinary learning, and unification of all subjects and experiences (Drake & Burns, 2016). More recently, research in cognition has revealed that interdisciplinary instruction fosters gains in ability to recognize bias, think critically, tolerate ambiguity, and acknowledge and appreciate ethical concerns (Starting Point Project, n.d.). The global dilemmas facing humanity should be enough incentive to overcome obstacles to interdisciplinary curriculum, to educate a generation with the needed intellectual tools. Research support is the only way to help educators to implement integration in humanities, the STEM fields, arts, and religious studies, and to achieve wider adoption.

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