



EXECUTIVE SUMMARY

In its 2021 Vision, the United Arab Emirates (UAE) government prioritizes the development of a “knowledge economy” to replace its current oil-driven one. National human capital must be fostered in order to fuel this transformation, and developing human capital involves building the skills and knowledge that drive cutting-edge entrepreneurship and innovation. Therefore, the Vision highlights the need to develop a new generation of creative and critical thinkers—citizens who are able to hone their conceptual abilities to raise the UAE’s international status to that of one of the most advanced countries in the world.

This paper emphasizes the integral role that literacy plays in the achievement of the Vision. An overview of reading and literacy theories highlights the different levels of understanding crucial to building the human capital on which a knowledge economy depends. This paper also explores the symbiotic relationship between literacy and critical thinking before reviewing international best practices related to promoting literacy. Familiarity with both literacy theory and best practices for the promotion of literacy informs recommendations for the UAE’s policymakers as they work to strengthen the nation’s existing knowledge society.

Challenges to Building a “Knowledge Society”: The Role of Literacy in Promoting Critical Thinking in the UAE

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Introduction

The United Arab Emirates (UAE) has seen marked growth and development in its short history as a nation. Since the UAE’s foundation in 1971, the country has made strides in development in sectors such as education, healthcare, and infrastructure with a ranking of number one in overall human development in the 2011 United Nations Human Development Index (Kannan, 2012). The country’s future development is currently being directed by the government’s 2021 Vision. In the Vision, leaders emphasize their ambition to raise the country’s status to one of the best countries in the world not only in terms of overall human development but also in knowledge, innovation, productivity, and competitiveness (United Arab Emirates Government, 2010, p. 18). The government is planning to achieve this goal through heavy investment in the creation of knowledge and innovation in order to build a “knowledge economy”—an economy fueled by human rather than physical capital—to replace its current oil-driven economy. In a knowledge economy, success is dependent on the ability to use knowledge and skills effectively to fuel innovation (ESRC, 2005). The Vision calls for Emiratis to be “well-rounded” citizens with entrepreneurial spirit and the desire to take calculated risks (United Arab Emirates Government, 2010, p. 18, 23). Entrepreneurship and risk-taking require Emiratis to use critical thought—a skill currently lacking in a large section of the national population of high school and university graduates (see Ridge 2011; Al Amiri 2012; and PISA 2012). The Vision underscores this goal by stating school curricula needs to “encompass critical thinking . . . [to equip] . . . youth with essential skills and knowledge for the modern world” (United Arab Emirates, 2010, p. 23). Literacy and critical thinking are closely linked in that fully literate people engage in critical thought as part of the reading process. Thus, promoting literacy promotes critical thinking, and so it is time for the building of literacy to take a central place in the UAE’s efforts to develop a knowledge society.

Purpose and Method

This paper utilizes existing theories relating to literacy, the researcher's own data on literacy in the UAE, and an exploration of international best practices in order to provide policymakers with suggestions for building literacy as a means of bolstering the UAE's burgeoning knowledge economy.

Understanding Literacy

Reading vs. Literacy Theory

Reading theory is often confused with literacy theory, so it is important to distinguish between them. Reading theory pertains to the processes involved in reading, such as decoding, analyzing, hypothesizing, and so on. Literacy theory relates to the broader discussion of what does and does not constitute literacy, which is defined as the ability to read and write. This paper will examine several dominant reading theories that link to a single perspective on literacy—that of the traditional view of literacy. This perspective, termed the Autonomous Model by Street (1993), sees literacy as a discrete phenomenon: a person is either literate or not. In the Autonomous Model, literacy is obtained through formal education and involves the acquisition of a set of reading skills, such as prediction, identifying the main idea, and evaluating a text; it rejects the notion of other forms of literacy such as the recognition of the shapes of street signs or communal literacy, wherein a group of people work together either to decipher the meaning of a written text or to create a written text.

Reading Theories

With numerous reading theories detailed in the literature, this section reviews relevant publications to highlight the different levels of understanding in the critical reading process.

Historically speaking, it is believed that reading originally focused on the pronunciation of words, known as decoding (Fisher, 2003). This fundamental form of reading allows for literal understanding of the text and is sequential in nature (Alderson, 2000). This "bottom-up approach" to reading views reading as the deciphering of letters and sounds, which then leads to understanding the meaning of an utterance (Gough, 1972).

Figure 1: Bottom-Up Process of Reading



Figure 2: Levels of Understanding in Reading



When decoding, the reader parses words and sentences and examines a text at face value. This means the reader does not infer or read beyond the text. The reader takes the meaning of the words literally. The following (adapted from "Making Inferences") is a good example of the use of decoding to understand a written text at face value:

Redwood trees grow in the coastal areas of the western United States. These trees can reach hundreds of feet in height and live thousands of years. They are endangered mainly because of global warming, which reduces the amount of fog on the coast. Redwoods get their water from fog.

A reader who solely uses decoding will understand that redwoods are old and rare trees, found mainly on the coast and endangered due to global warming. A reader who uses higher order thinking skills can infer *the reason* for the endangerment: namely that the trees' very existence depends on the water held in the coastal fog, which is no longer available in the large amounts due to global warming.

Decoding represents the lowest level of understanding possible in the reading process. It is also the level currently being focused on in the government education system in the UAE (Freimuth, 2014b).

Alderson (2000) contends there are two other levels of comprehension—inferential and evaluative—that can, but do not necessarily, occur during the reading process. Engagement with all three levels of understanding creates a critical reader. It is this global act of reading that needs to occur among students in the UAE in order to build the critical thinking skills needed for a knowledge-based economy.

Inferential understanding is the second level of comprehension and is significantly different from the literal decoding act. Inferential engagement requires the reader to read between the lines, connect information from different parts of the text, and draw conclusions, as the earlier example of the redwood text highlighted.

The third level of understanding, the evaluative level, is the highest cognitive level of understanding that can occur in the act of reading (Alderson, 2000). Evaluative reading requires the audience to make critical evaluations related to the text. This requires the reader to make use of numerous higher order thinking skills and strategies among which are

analyzing, synthesizing, hypothesizing, and identifying bias (Alderson, 2000). The earlier example of the redwood text can be used to further clarify this level of understanding. Whereas the inferential level allowed for the reader to understand that the trees are reliant on the water from the fog for their existence, the reader could go one step further and hypothesize that because global warming is caused by human activities, that humans are personally responsible for the demise of the redwoods and should make efforts to conserve them.

Critical Thinking

Promoting literacy requires building critical thinking skills among UAE nationals, yet there are different perspectives on what constitutes critical thinking. McPeck (1981) defines it as an activity that requires reflective thought while Ennis (1985) adds to this the ability to decide what action to take in a given situation. Beyer (1984) broadens the scope even further by outlining nine discrete skills that comprise critical thought. These skills include distinguishing between 1) fact and opinion; 2) relevant and irrelevant points; and 3) reasonable and unreasonable claims.

In light of these perspectives, this paper defines critical thinking as a combination of all of the above with the added dimension of a person's ability to approach an issue with an open mind and from multiple perspectives (Paul, 1984).

Critical thinking is an inherent part of the reading process since the act of reading requires the reader to engage actively and critically with a text. Readers must be able to analyze the text, compare different parts of the text, evaluate the text, and determine the text's claims and their validity. A good reader is also able to create and test hypotheses, distinguish fact from fiction, and argue for or against the points in the text. Critical reading requires reflection, judgment, and reasoning. To sum up, a good reader is a good thinker.

Building Literacy

Building literacy produces strong thinkers—and critical thinkers are what the UAE requires for the development of a knowledge economy. The UAE's 2021 Vision (United Arab Emirates, 2010) is clear in its call for "knowledgeable and innovative Emiratis [to] build a competitive and resilient economy" (p. 1) as "captains of industry and dynamic entrepreneurs" (p. 16). This is to be achieved through "more Emiratis['] entering] higher education, where they will enrich their minds with the skills that their nation needs to fuel its knowledge economy" (p. 16). One of these skills, according to the

Vision, is critical thinking (United Arab Emirates, 2010, p. 23). Since research supports the notion that reading necessitates critical thinking, then improving literacy must be a high priority for the UAE government.

Yet, building literacy is not a discrete act. Research has shown that literacy is best developed through both the home environment and the education system.

Home Environment and Literacy

Studies have shown that the education system cannot effectively promote reading on its own. To become good readers, young learners must grow up in print-rich homes. A print-rich home surrounds learners with a diverse array of print matter such as newspapers, magazines, and books and exposes them to practices associated with school-based learning. Studies have shown that there is a marked difference in reading comprehension and vocabulary acquisition for learners coming from print-rich homes compared to those from print-poor ones. Moreover, children perform better overall in school when they come from print-rich homes in which parents engage in literacy practices associated with schooling (Van Steensel, 2006; Snow, Barnes, Chandler, Goodman & Hemphill, 1991).

Early engagement with literacy in the home also translates into higher school achievement later in life (Barnett, 2003). A comparative study between "facilitative mothers" (mothers who read to their children and surround them with books) and "conventional mothers" (mothers who leave the task of building literacy up to the school) found that children of facilitative mothers acquire a higher interest in reading and a greater knowledge of print as a whole.

These findings could have implications for Emirati families, whose children are often raised by maids whose English/Arabic skills may be weak. In a recent university study, only 9% of students surveyed indicated they had been read to as children by their parents (Freimuth, 2014a), suggesting their parents were of the "conventional" type.

School Environment and Literacy

The education system is the second fundamental factor in building literacy. Some schools try to achieve this through using pre-packaged reading programs that promote intensive phonics instruction. This type of program offers learners a rigid, decoding-based curriculum in which students perform well on pronouncing words aloud but not so well on reading comprehension (Krashen, 2011). Other schools prefer alternatives to direct instruction, such as sustained silent reading.

Krashen (2004) has renamed this literacy practice "free voluntary reading," or FVR. This type of reading allows students to read for pleasure with little to no accountability. At regular times throughout the week, students in the classrooms engage with any and all forms of texts that interest them. To date, schools have been successful in building some of the higher order thinking skills related to reading comprehension in this manner, with studies indicating a marked improvement on reading comprehension and vocabulary acquisition (Krashen, 2004). FVR promotes the idea that the more you read, the better a reader you become. Studies on FVR have found that when the teachers join their students in sustained silent reading, more reading takes place (Von Sprecken & Krashen, 1998; Wheldall & Entwistle, 1988). More reading also occurs in classrooms in which books and other reading material are readily available for FVR (Von Sprecken & Krashen, 1998).

Many schools in North America have turned to FVR to solve their literacy concerns. In the United States, Maine's Noble High School is one such example. It has implemented its own school-wide FVR program to build literacy in response to a 2004 self-study that revealed the existence of a strong non-reading culture. The study found that students did not read regularly outside of the classroom, labeled themselves as "non-readers," and rarely visited the school library—a description that fits UAE national students as well (Freimuth, 2014a). The program was found to be highly successful with book sign-outs from the library almost doubling and nearly 90% of students reading on a regular basis after the FVR initiative began (Perks, 2006).

Literacy in the Context of the UAE

Two sets of data are currently available on UAE literacy. PISA (2012) assessed 15-year-old national students in reading literacy. Results ranked the UAE 44th out of 65 countries, with an overall mean score of 442 as compared to the top performer's score of 570 (China). The findings found gender differences in this age group with regards to reading literacy, showing a mean score of 413 for males and 469 for females. PISA (2012) revealed that only 36% of the students assessed in reading reached the level the Organisation for Economic Co-operation and Development (OECD) deemed necessary for succeeding in a knowledge economy (p. 9).

This gender performance gap is also evident in UAE nationals over the age of 15. The World Factbook

Table 1: 2012 Reading Literacy Results for 15-year-olds in the UAE

15-year-old Students	PISA Assessment Score
Overall Mean Score	442
Mean Score of Male Students	413
Mean Score of Female Students	469

Source: PISA, 2012

(2013) reports an overall literacy rate of 90%, with an 89.5% rate for males and a 91.5% rate for females in the country.

Home Environment in the UAE

With a strong oral culture shaping the UAE's society, reading is not a dominant feature in the nation's homes (Swan & Ahmed, 2011). Traditionally in the Gulf region, stories and other elements of culture were "transmitted by a long chain of interlocking face-to-face conversations" (Rosenberg, 1987, p. 75). Heard-Bey (2013, p. 114) confirms the UAE's strong oral culture, noting the "spoken word has always been the superior art form of the tribal people." With oral literacy shaping the youth of the nation in their homes, the written literacy needed to build a knowledge economy is generally not fostered.

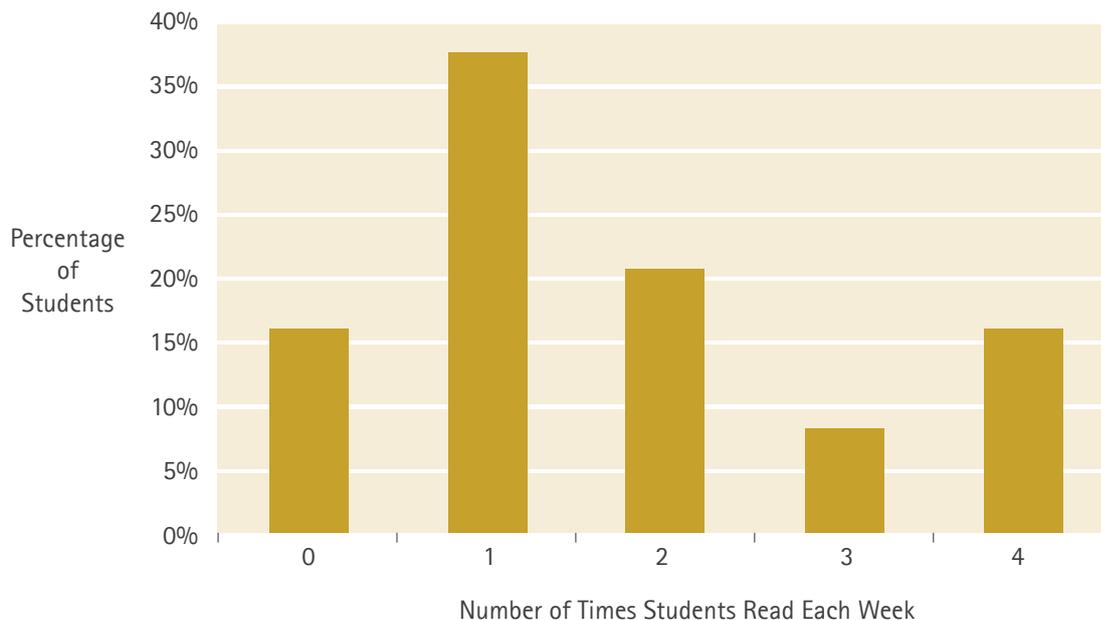
This is evidenced by the Arab League Table (Al Yacoub, 2012), which reveals that only 22% of Emiratis consider themselves "readers." This implies that many Emirati homes may not offer children print-rich environments. A study conducted by Ridge and Farah (2012) reported that 52% of students surveyed at a higher educational institution in the UAE grew up with fewer than 50 books at home. Another study done on print-based reading in Abu Dhabi resulted in similar findings. Freimuth (2014a) surveyed 54 preparatory students on their reading habits, preferences, and attitudes (see Tables 3 and 4). Results indicated that most students read for pleasure only one to two times per week, for no longer than 40 minutes. The majority of students did not own more than 10 books unrelated to their studies, and newspapers and magazines were the students' most common choices of reading material. When asked if reading was important for life, 20% of

Table 2: 2013 Adult Literacy Rates in the UAE

Adults (15 Years +)	Reading Literacy Rate
Overall Literacy Rate	90.0%
Male Literacy Rate	89.5%
Female Literacy Rate	91.5%

Source: World Factbook 2013

Table 3: How Often Students Read in a Week



the students answered "no." When asked if reading was important for academic study, 31% answered negatively. Only 9% of students reported that their parents had ever read to them as children.

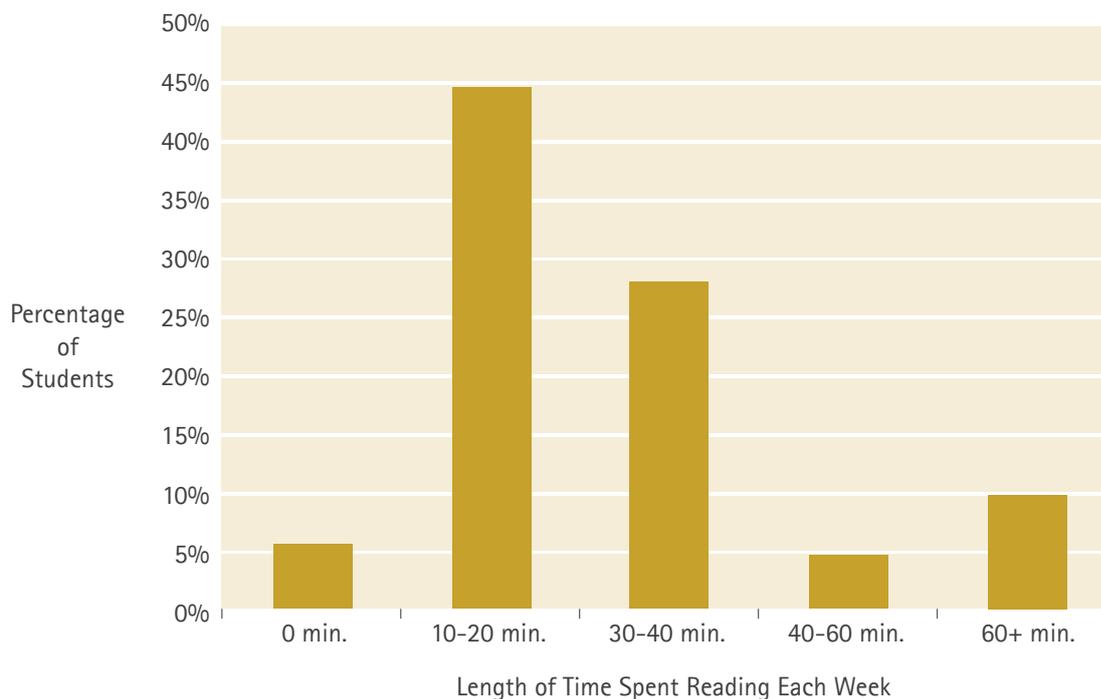
These studies indicate that the majority of national homes tend to be print-free or print-poor. This speaks to Street's (1993) theory that literacy is embedded in social practice. The where, why, what, when, and how of reading is, in fact, socially constructed. Street argues that children in homes in which families value

literacies associated with schooling end up valuing these literacies. It stands to reason then, that homes that value oral literacies raise children who value the same, resulting in UAE citizens who lack the literacy skills needed to build a knowledge economy.

School Environment in the UAE

As outlined earlier, the building of literacy is supported by print-rich learning environments and regular free voluntary reading in the classroom. but UAE

Table 4: How Much Time Students Spend Reading in a Week



government schools do not typically provide such support.

Ridge and Farah (2012) found that learners had very little exposure to free voluntary reading in the high school system, with an alarming 72% of learners claiming they never read for pleasure in class. Furthermore, more than three-quarters of the students indicated they did not take regular trips to the library. This figure was confirmed by a separate study showing only 33% of students had regular visits to the library in their high schools (Freimuth, 2014a). According to Ahmed (2012), libraries were cited as "the least-visited facilities" in Abu Dhabi schools and many teachers were themselves unfamiliar with libraries due to their own cultural and educational backgrounds. In support of this claim, a survey conducted at a university preparatory program (Freimuth, 2014a) revealed that only 33% of students had been read to by their high school teachers. Upon further inquiry, students indicated that much of this reading has been from textbooks.

Currently the curriculum in the government schools does not promote the first level of reading (decoding), let alone the higher levels of critical reading (inferential and evaluative) in English. The majority of teaching that takes place in the high schools is in mathematics, science, Arabic, and Islamic Studies (Ridge, 2011). One might assume that Arabic classes foster the practice of extensive reading and critical thought. According to Nazzal (2013), however, a report entitled *Arabic for Life*—written by a commission tasked with reviewing and assessing the teaching of Arabic in the UAE—claims the main purpose of teaching Arabic was to learn grammar. Teaching grammar, in this case, occurs at the expense of reading and writing in Arabic, something the Ministry of Education is planning to rectify in the near future by designating one class a week for the promotion of reading exclusively (Nazzal, 2013). The teaching of grammar at the expense of higher-level (inferential, evaluative) reading in Arabic does little to build the critical thinking skills needed to create a knowledge economy.

The assessment of reading in high school, according to students in a focus group study on IELTS reading (Freimuth, 2014b), mainly takes the form of literal multiple-choice questions in high school. Literal questions relate to the first level of understanding in reading—that of decoding. According to the students, they are not asked to critically analyze their reading texts, and questions are literal, not inferential or evaluative, in nature. Ridge (2011) confirms these claims, citing the current educational system's dominant features of rote-learning and standardized

testing. PISA (2012) outlines the highest level of reading as readers who are capable of undertaking "fine-grained analyses" of unfamiliar texts (p. 9) and states 36% of the current 15-year-old national population assessed is able to read at the third (evaluative) level.

International Efforts to Promote Literacy

With such challenges to building literacy in both the UAE's homes and the education system, it is helpful to explore how other countries have dealt with similar challenges in order to inform policy recommendations.

Japan is a global education leader, with a current literacy rate of 99% (World Factbook, 2013). For Japan, the years 2000 and 2001 were instrumental in bringing about a societal awakening regarding the importance of reading. The year 2000 was designated "Children's Reading Year" and saw the rise of a series of workshops, exhibitions, book talks, etc. to promote reading. In 2001, the Japanese government passed a law to mandate the act of reading. This push to read culminated in initiatives such as morning reading time in school, the opening of the International Library of Children's Literature, a designated Children's Reading Day (April 23), and the establishment of the Children's Dream Fund, which gives annual grants to various reading campaigns.

South Africa, which struggles with low literacy rates, has launched similar literacy campaigns. These include events such as read-a-thons, book drives, literary festivals, community-based reading clubs, book fairs, and the designation of a national reading week.

Word of the importance of literacy is also being spread through South Africa's "The Big Read Campaign." The organization published a book called "The Big Read," a special compilation of short stories and poems designed to inspire the reader and featuring work from Nelson Mandela and Desmond Tutu.

Other creative initiatives promoting literacy abound. In Singapore, for example, a large library was built inside a shopping mall to promote access to books. The National Library Board's annual Read! campaign sees over 300 books discussions annually. Other organizations in the country hold author lecture series, social events, and conferences to promote literacy. South Korea has been promoting its citizens' literacy from birth through its Bookstart program. Mothers of newborns receive book packs for their babies shortly after giving birth. On average, 120,000 babies receive the packs each year. The National Literacy Trust in England works with businesses, non-profit organizations, prisons, and

others to create Storysacks for schools, homes, family centers, and public libraries. A Storysack is a large cloth bag that contains a storybook and materials such as soft toys related to the story and its characters, props, and scenery designed to make the book come alive.

Other organizations are also joining the drive for literacy. In the United States, animal rescue groups are encouraging children between the ages of six and fourteen to read to rescued animals. This not only improves the children's literacy skills but also provides much-needed human interaction for the shelter animals. McDonald's in the United Kingdom is supporting literacy efforts through its Happy Readers Campaign, which replaced Happy Meal toys with books.

Some countries are also promoting literacy through encouraging the breaking of world reading records. In 2012, Ireland made a new world record of the most authors reading consecutively from their books. In the United States, the tallest tower of hard cover books (34 feet) can be found in the Ford's Theatre Center for Education and Leadership in Washington, DC. These initiatives are only a few examples of the promotion

of literacy around the world. The number of possible programs is practically limitless.

In the GCC, efforts to promote literacy are also part of national agendas. In Bahrain there is a home-focused mother-child initiative program. The Mother-Child Home Education Program (MOCEP) aims to empower women to equip their children with pre-school literacy skills through training and materials. The MOCEP was launched in the year 2000 and has seen children in the program outperform those not in the program significantly in measures related to verbal abilities, reasoning abilities, and behavioural issues (UNESCO, 2014). Currently, the literacy rate in Bahrain stands at 94.6% (World Factbook, 2013).

Qatar, whose literacy rate of 96.3% is among the highest in the region, joined Ireland and the United States in breaking world records. Qatar broke the world's largest reading lesson record with 1390 participants on April 23, 2014. In the UAE, where the literacy rate is 90% (World Factbook, 2013), efforts have focused more on international book fairs and the Emirates Airline Festival of Literature rather than on world reading records or mother-child initiatives.

Table 5: Literacy Rates by Country

Country	Literacy Rate
Ireland	99.0%
Japan	99.0%
United Kingdom	99.0%
United States	99.0%
South Korea	97.9%
Qatar	96.3%
Singapore	95.9%
Bahrain	94.6%
South Africa	93.0%
United Arab Emirates	90.0%

Policy Recommendations

With the UAE steeped in oral traditions, helping citizens embrace a reading culture may prove challenging for the government. Such a cultural shift will require intensive literacy awareness campaigns that ignite the interest of the entire nation in order to plant the seeds for the growth of a reading culture. To encourage UAE nationals to embrace this campaign, a number of suggestions follow.

Public Reading Campaigns

To capture the hearts and minds of the Emirati people, any reading campaign needs to be grand in nature and wide in scope. This type of campaign is needed to raise awareness of the importance of reading among UAE citizens, who represent a traditionally oral society. Grand initiatives in other domains such as the building of the Burj Khalifa and the Dubai Mall have resulted in national and international awareness of the projects. This reading initiative, therefore, needs to be on the same scale. It also needs to be supported by federal funding so that the northern emirates participate in the initiative to the same degree as Abu Dhabi and Dubai. It needs to engage high profile businesses that serve the local population on a daily basis, such as McDonald's, Starbucks, and Carrefour. The campaign should be visible through initiatives at major tourist sites such as the Burj Khalifa and Dubai Mall, which could be combined with projects to break world records related to literacy. For example, the national government could build the world's largest book tower inside the Burj Khalifa. Officials could construct the world's largest library in a public venue or host the world's biggest literary festival.

Involving Families

To promote the building of literacy skills at an early age, the UAE could develop initiatives similar to South Korea's Bookstart and Bahrain's Mother-Child Home Education Program in order to provide the youth of the nation with print-rich home environments. Awareness campaigns that include a designated month, week, or day of reading featuring nationwide book fairs, conferences, book drives, read-a-thons, and literary festivals would also highlight the importance of literacy and offer audiences an easy way to take part in reading activities outside school.

Nationwide Reading Mandate

Any campaign needs the visible backing of the leadership of the country. To emphasize the importance of reading, the UAE leaders would be wise to follow

in the footsteps of their Japanese counterparts and make the act of reading a legal requirement in UAE government schools and curricula. This would ensure that the act of reading occurs and would elevate reading to a higher status in both the education system and society as a whole. Since the curriculum, assessment, and physical spaces in the schools need to reflect this change in focus, the government will need to increase funding to schools for the promotion of literacy (specific recommendations outlined below).

National Curriculum and Assessment Changes

Within government schools, changes to the national curriculum mandating daily free voluntary reading should be supported by the building of reading and learning spaces (i.e., libraries, classroom reading corners, student learning centers, etc.). Classrooms need to be well stocked with a diverse array of print materials such as magazines, newspapers, and books (fiction and non-fiction). To bridge the gap between oral literacy and written literacy, the curriculum should marry long-established oral traditions, such as storytelling, with print-based reading. Students will read beyond the literal level of understanding and engage in inferential and evaluative thought through the guidance of their teachers.

Since assessment needs to be in line with classroom practices, current assessment methods in the public school system would be re-shaped to reflect new literacy practices. This translates into critical analyses of texts' replacing the current literal interpretation and rote memorization of texts. In terms of the earlier mentioned Redwood text, this would mean students infer and evaluate during reading assessment rather than answer literal questions about or memorize chunks of the text.

Teacher Professional Development

Fostering FVR and print-rich environments, however, requires teachers not only to take their students to the library (something few teachers currently do) but also to partake personally in the act of free voluntary reading alongside their students. Teachers could further engage learners by reading to their classes regularly. In-class activities should acquaint students with how to critically analyze diverse texts. To do this, teachers must learn to ask students the right kinds of questions related to reading and learning processes. Rather than literal multiple-choice questions, for instance, teachers should focus on open-ended, inferential, and evaluative questions because these require students to

think critically. Because many of the UAE's teachers are not trained in these skills and/or did not attend schools with such practices in place, provisions should be made to allow educators to be further trained in promoting literacy (and, thus, critical thinking) in their classrooms. The government therefore needs to allocate new funding for said training to occur in the form of summer workshops and year-round training sessions. This professional development would inform teachers of the various levels of literacy, engage them personally in higher-level literacy practices, and allow them to explore the various ways to build this type of literacy in their classrooms.

Conclusion

Building a reading culture in an oral society is a challenging endeavor, but it is necessary in order to build the knowledge economy that UAE leaders have outlined in their country's Vision statement. A knowledge economy requires its citizens to be critical thinkers, and critical thinking abilities are fostered through the promotion of higher-level literacy skills. With the development and promotion of reading across the UAE—from the home, to the school, to the workplace—there is no doubt that the UAE would be closer to becoming a society grounded and driven by knowledge.

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