How School Leaders Can Use Bloom's Taxonomy to Promote Education Reform

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Abstract

Education reform in all Gulf Cooperation Council (GCC) countries, especially in Saudi Arabia, has become a significant undertaking as efforts are being made to improve existing educational processes and promote better outcomes. Educational leaders must play a critical role in the implementation of large-scale reform. As such, it is critical to focus on how educational leaders can adopt and promote new educational strategies that align with the goals of Saudi Arabia's 2030 vision. This systematic research aims to shed light on the current educational reform in Saudi Arabia and GCC countries and offer recommendations for how educational leaders can shape outcomes in order to produce learners who are critical thinkers. The author used a critical qualitative approach to systematically review and evaluate the literature using the lens of Bloom's taxonomy to highlight the current opportunities and challenges for GCC countries. author found clear evidence that despite efforts in pursuit of educational reform, educational leaders must consider issues such as student autonomy, teacher identity, critical thinking, and rote memorization.

Keywords*:* Reform, Bloom's taxonomy, educational leadership, critical thinking

Introduction

One of the basic questions facing educators globally and practically in GCC has always been inspired by the question, "Where do we begin in seeking to improve human thinking?" (Houghton, 2004). In GCC countries, there is a big move to raise this question on how to change educational outcomes and where we should start. Educational reform in all GCC countries and especially in Saudi Arabia becomes a significant challenge in improving educational processes to facilitate better outcomes.

In Saudi Arabia, the 2030 vision challenges Saudi Arabia's citizens, organizations, and systems to hold ourselves to higher standards of achievement and success in all aspects including education. In order to implement large-scale reform in pursuit of nationwide progress and growth, it is critical to focus on adopting a new teaching strategy that matches the goals of the 2030 vision. A quick literature review shows there is evidence that existing educational processes, specifically when it comes to teacher training and mentorship, in Saudi Arabia's educational system have promoted memorization instead of critical thinking. Consequently, it is important for educational leaders to support teachers in integrating critical thinking activities into the curriculum and the classroom. Saudi Arabia along with other GCC countries share the same trends as evidenced by recent low-performance results from international tests.

As such, the purpose of this research is to utilize Bloom's Taxonomy to examine the education learning process that happens within educational spaces. Educators have typically used Bloom's taxonomy to inform or guide the development of assessments (tests and other evaluations of student learning), curriculum (units, lessons, projects, and other learning activities), and instructional methods such as questioning strategies (Armstrong, 2010).

This research examines the challenges of innovation in the dramatically transforming contexts of education in GCC countries with a specific focus on 1) highlighting trends in curriculum development, 2) questioning critical thinking skills, 3) centering Bloom's taxonomy as a starting solution, and finally 4) providing insights and policy directions on future government plans such as Saudi Arabia's 2030 vision.

In this study, the author will first discuss the status quo of curriculum development in Saudi Arabia and Gulf countries. Then, she will highlight the association between such practices and current low-performance outcomes. Next, she will present findings about the effect of planning learning objects using Bloom's taxonomy. Finally, she will talk about how the Saudi Vision 2030 plans for education improvement strive to leverage the educational system with better outcomes and to increase access to better educational opportunities for underrepresented groups of both teachers and students.

Theoretical framework

The author situated the framework around the American Society of Training and Development (ASTD) guidelines, which suggest that all effective training begins with a needs assessment that measures what skills individuals have, what they need, and how to deliver the right training at the right time. Programs that are based on well-conducted needs assessments lead to changes in learner behavior. The author practically applies Bloom's Taxonomy theory as the author believes that any educational reform should start from the first learning space—classrooms. Bloom's Taxonomy is a classification of the different objectives and skills that educators set for their students (learning objectives).

Like other taxonomies, Bloom's is hierarchical, meaning that learning at the higher levels is dependent on having attained prerequisite knowledge and skills at lower levels. In fact, Bloom's Taxonomy is often displayed as a pyramid graphic to help demonstrate this hierarchy. The author used the updated version of this pyramid hierarchy to emphasize that each level is built on a foundation of the previous levels. The new version has been recently updated to include the following six levels of learning (see figure 1) and was used for this study. These six levels can be used to structure the learning objectives, lessons, and assessments of a given course (Armstrong, 2010):

Remembering: Retrieving, recognizing, and recalling relevant knowledge from long-term memory.
Understanding: Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
Applying: Carrying out or using a procedure for executing or implementing.
Analyzing: Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing.
Evaluating: Making judgments based on criteria and standards through checking and critiquing.
Creating: Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.

Comparative approach

The author purposely chooses the comparative approach to compare Saudi Arabia and GCC based on Phillips and Schweisfurth's (2006) recommendations, and the author examines curriculum development through the lens of Bloom's taxonomy as a unit of comparison. The comparative approach of evaluating the research problem in multiple settings adds to the literature in two ways. First, the author critically analyzes the current trends of technology readiness and their impact on digital literacy in order to evaluate current practice in the countries in inquiry (Phillips & Schweisfurth 2006). Second, to challenge the educational system structure regarding youth empowerment, gender equality, and social mobility to promote more in terms of access and opportunities for all.

The guiding research questions are as follows:

1. Why does the Saudi education system need to use Bloom's Taxonomy?
2. Where are we in Bloom's Taxonomy?
3. How is this need applicable to GCC countries?

Context

The Gulf Cooperation Council (GCC) countries—Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE)—have clearly demonstrated great work in addressing the needs for reforming education and increasing access, opportunities, and attainments.

The center of the discussion around the impact of building critical thinking skills on inequities and injustices in every domain of education. The author argues that achieving equity in education quality, outcomes, and opportunities have long been objectives of national governments and agencies (Jacob & Holsinger, 2008). However, in all GCC countries, significant efforts are being made regarding achieving this goal. For instance, it is clear that, in GCC countries centered on youth employment and skills, critical thinking is at the top of both policy and education agendas.

According to the United Nations Educational, Scientific and Cultural Organization (2015), the empowerment of youth is the new frontier for human rights in the 21st century as it means genuine possibilities for them to become everything they wish for and to make their own informed choices. The author argues that the current status of educational reform in GCC countries is aligned with this view. Numerous training programs have recently been launched in several GCC countries, with these efforts primarily targeting improving the curriculum and professional development of teachers. This research argues that before scaling up educational reform in the region, policymakers need to know the current status of those efforts and their impacts on reality, with a focus on how Bloom's taxonomy might be a solution to those challenges.

Some examples of programs that bring training to improve digital skills and thinking among citizens include:

United Arab Emirates: The E-Citizen program aims to prepare the public to use e-services and other online services in their daily lives. It is being implemented in Abu Dhabi in collaboration with the UAE Academy and Abu Dhabi Chamber of Commerce and Industry (Manipal University Dubai Campus, 2009).

Oman: The digital literacy program was launched in 2007 by IT Authority (ITA) to train 18 teachers who would then go on to train others throughout the public sector. The aim of the program was to strengthen IT skills within public sector organizations in Oman (Oxford Business Group, 2008).

Kuwait: The Central Agency for Information Technology digital literacy program "will offer 100,000 employees and job seekers in the government sector an equal opportunity to acquire computer skills essential in today's workplace" (Al-Sharida, 2007).

Saudi Arabia: The e-government program (Yesser) is designed to provide citizens with increased access to government services through digital platforms (YESSER, E-Government Program, 2021). The Noor Registration system offers a more convenient enrollment option for students so that parents can register students for a specific school online, without having to set foot on the school's campus (Ministry of Education – Kingdom of Saudi Arabia, 2021). Additionally, Saudi Arabia's open educational resource (OER) network aims to provide students with open-access educational materials and enhance the quality of resources available to learners in the kingdom (National eLearning Center, 2021).

Methods

The author used a critical qualitative approach to systematically review and evaluate the literature using the lens of Bloom's taxonomy to highlight current opportunities and challenges for GCC countries. Criteria for inclusion required that studies were peer-reviewed and directly examined curriculum development or evaluated education in the GCC context. Our final list includes about 40 studies published after 2000. The author completed an annotated bibliography and then engaged in open coding and identified significant themes. Following theme identification, axial coding was utilized to identify commonalities across the studies that were reviewed.

Findings

So far, the author found clear evidence that despite efforts towards educational reform, different experiences have existed regarding curriculum development among the GCC educational system. Based on the analysis, the author summarized our findings under the following themes:

Student Autonomy

One result the author found in our research pertains to the lack of autonomy for students in their learning. With a focus on memorization as the primary teaching strategy, it is clear that students tend to be passive in their interaction with learning since memorization did not improve their critical thinking skills.

This finding is connected with a body of literature that highlights the need to move instruction to higher levels of Bloom's taxonomy beyond knowledge. Alyami (2016) notes that even "the curriculum focuses on preparing students for exams by concentrating on reciting and memorizing the content of a textbook, and ignores the application of knowledge, innovation, and research" (p. 63).

Teacher Identity

One of the main themes from the research is the absence of teachers' identities in terms of their power in designing, implementing, and evaluating the curriculum. Many studies' findings confirm a common phenomenon that teachers disagree with the current textbooks and how they are forced to follow a top-down approach to implement learning goals. Further, it seems that there is a disconnect between educational reform and practice. For instance, Saudi Arabia's Ministry of Education establishes new conventions/instructions/features to improve teaching and learning, but teachers tend to use them to facilitate old methods of teaching.

Critical thinking

One of the major themes that the author explores is related to the absence of critical thinking and how that absence has negatively impacted many educational interventions aimed at developing cognitive skills and curriculum. Al-Zahrani and Elyas (2017) noted that critical thinking is mostly considered a privilege in Saudi Arabia as compared to Western contexts, where critical thinking is a cultural norm (p. 135). Alwadai (2014) stated that Saudi teachers didn't use instructional practices that promoted the practice of critical thinking into their classes, due to extensive amounts of course material that needed to be covered. Also, Alnofaie (2013) explained that critical thinking is another face to Bloom and his way of identifying the nature of cognitive skills.

Rote memorization

One of the trends that the author explores is related to the idea of rote memorization, where the learner will be able to quickly recall the meaning of the material the more one repeats it. This is evidence of the lack of critical thinking strategies that should be encouraged in educational practices. As demonstrated by Elyas and Picard (2010) and Bunaiyan (2019), the Saudi public education system excluded critical thinking strategies in classrooms and promoted teaching through rote memorization.

Implications and Recommendations

This work is of critical importance to the field of education as there is a clear gap between what is expected of students in terms of educational outcomes and what is prioritized and reinforced in the classroom. In an attempt to provide a critical voice for reform in this discussion, it is important to use research to inform policy and practice.
Going forward, educational leaders should consider several factors in training and mentoring new teachers and promoting critical thinking within the curriculum. First, educational leaders should work with teachers to develop instructional strategies and activities that promote critical thinking skills. Partnering with teachers to develop these activities is crucial in order to avoid teachers falling back into old habits that promote memorization instead of critical thinking. Further, educational leaders can guide teachers to develop assessments centered on problem-solving instead of demonstrating knowledge, which will require teachers to work with students through multiple levels of Bloom's taxonomy (Behar-Horenstein & Niu, 2011). Research also shows that educational leaders should encourage teachers to be flexible in their approaches. In other words, certain instructional strategies may be useful for strengthening critical thinking skills in certain students, while other students may need lessons that are tailored or delivered differently (Behar-Horenstein & Niu, 2011). Secondly, educational leaders should encourage teachers to be themselves and to lead the classroom with a sense of humor. It is important that teachers establish an identity within the classroom, informed by their unique personalities and strengths. When used effectively in the classroom, humor can be a valuable tool for promoting student engagement and enhancing the acquisition of certain high-level skills, so encouraging instructors to crack a joke in the classroom every now and then can actually be sage advice (Goodboy et al., 2015).

Finally, educational leaders should encourage instructors to integrate technology in deliberate and purposeful ways in the classroom, while keeping equity at the forefront of all activities and expectations. When used to provide a convenient shared space for students and when paired with clear expectations and consistent feedback, digital e-learning platforms can be incredibly useful and promote the development of critical thinking skills by giving learners more autonomy and control over how and when they process information and engage in learning activities.

In using technology effectively, instructors can facilitate the acquisition of both cognitive and meta-cognitive skills while also providing opportunities for students to develop soft skills while engaging and building relationships with their classmates (Kong, 2015). However, it is critical that educational leaders and instructors work together and know how to use the technology themselves. Neither leaders nor instructors should expect the technology to be self-explanatory or simply a place to store files or assignments. Activities should be designed to meet students' unique needs and to move them through the hierarchy of Bloom's taxonomy in a structured and organized way.

While these recommendations scratch the surface in terms of how educational leaders can effectively utilize Bloom's taxonomy to promote critical thinking, they can be considered a foundation for more involved and complex initiatives in the future. In reflecting on the goals of reforms instituted by GCC countries, it is critical to have an accurate assessment of the unique needs of each educational system and to make recommendations accordingly. Without such an understanding, reforms cannot be targeted and designed to improve specific educational outcomes. In determining the best course of action for future education reforms, the information presented in this study can be used to identify opportunities for integrating Bloom's taxonomy of learning into the classroom in order to promote the development of critical thinking. The importance of critical thinking skills cannot be understated, and reforms designed to reinforce these skills, as opposed to rote memorization, in all facets of education can promote equity by increasing students' access to future opportunities outside of the classroom.

Figure 1

Bloom's Taxonomy of Learning
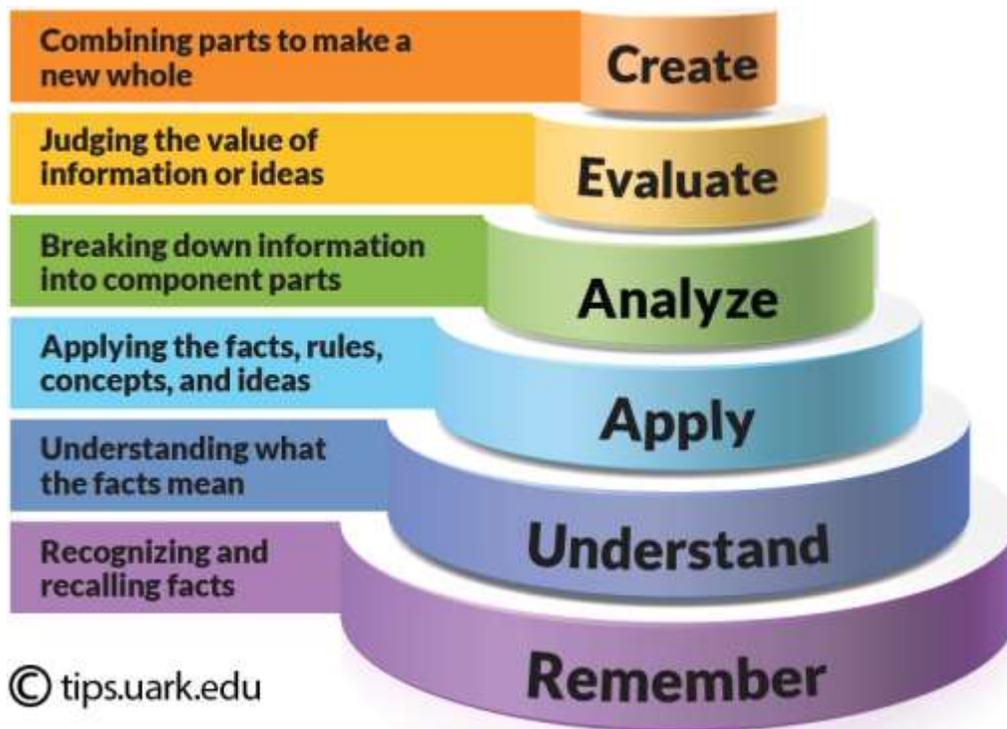
Note. From "Using Bloom's Taxonomy to Write Effective Learning Objectives" by J. Shabatura, 2013, *University of Arkansas TIPS* (https://tips.uark.edu/using-blooms-taxonomy/).

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