Aligning Theory and Practice: Developing the Concept of Curriculum Alignment through Faculty Education

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Abstract: This study explored faculty members' knowledge, perceptions, and application of the concept of curriculum alignment (CA) after completing educational workshops at a large public university in Saudi Arabia. The research focused on two questions: 1) Is there a significant gain in the participants' knowledge of the concept and elements of CA post workshops; and, 2) What are participants' perceptions and application of the concept upon return to their colleges/departments. The mixed-method research design included a pre/post-test instrument ($n = 202$) and semi-structured interviews ($n=10$) with participants who completed four faculty development sessions focused on curriculum concepts: 1) curriculum foundations, 2) teaching and learning strategies, 3) lesson design, and 4) assessment. Statistical analyses of pre/post workshop results and a content analysis of interview responses post workshops explored the knowledge and perceptions of participants. The quantitative results showed a significant gain post-workshop in all four areas of CA, however, limited knowledge of the concept overall, with the exception of lesson design. The content analysis revealed three themes based on the participants' perceptions and subsequent application of the concepts: 1) strong awareness and application of teaching strategies; 2) a basic foundation of CA; however, 3) minimal understanding and application of the deeper concepts of and connection between elements of CA. The study concludes with implications for future development focused on more cohesive faculty education in CA, curriculum-related competences linked to faculty development, and sustainable application of curriculum concepts learned in the colleges/programs.

Keywords: Curriculum Alignment, Constructive Curriculum, Faculty Education, Saudi Arabia Higher Education

1. INTRODUCTION

The concept and role of curriculum in education has been discussed and researched for more than six decades (Biggs, 2014; Leitzel and Vogler, 1994). Still, the concepts of curriculum and alignment are ambiguous to faculty members, particularly in higher education, where the curriculum is often considered merely the course content and syllabus (Fraser & Bosanquet, 2006). Scholars Biggs and Tang (2011) explained the basic concept of constructive alignment: " 'Constructive' comes from the constructivist theory that learners use their own activity to construct their knowledge as interpreted through their own existing schemata. 'Alignment' is a principle in curriculum theory that assessment tasks should be aligned [by educators] to what it is intended to be learned, as in criterion-referenced assessment"(p. 97).

In practice, the concept and definition of alignment is often limited to linked outcomes between international accreditation and national quality standards and institutional, program, and course outcomes. In the context of this study and in the national Saudi context in general,

the concept of curriculum alignment is ambiguous for three primary reasons. First, a limited number of higher education faculty members have educational credentials or certification. Second, faculty members are often not considered major stakeholders in curriculum design (El-Okda, 2005). Finally, faculty education, including concepts of curriculum and pedagogy, is fairly new to Saudi higher education and not yet based on a set system of faculty competences or faculty education curricula (Muammar & Deraney, 2019). In fact, faculty education, prompted by the National Qualifications Framework (National Commission for Academic Accreditation and Assessment, 2015) and facilitated by Deanships or centers for teaching and learning across the Kingdom, has been a national focus for just over a decade (Alnassar & Dow, 2013; AlRweithy & Alsaleem, 2015).

The primary rationale for this study is to explore the effect of an intensive professional development series on faculty members' concept and application of curriculum alignment, a topic that has not been researched in this context. As systematic academic development is a recent development in Saudi Arabia—primarily over the last

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decade (Al-Hattami, Muammar, & Elmahdi, 2013; AlRweithy & Alsaleem, 2015), this study can add to the growing, yet limited faculty development research, and help expand this important discussion. Using a mixed-method research design including pretests and post-tests and semi-structured participant interviews, the research focuses on two main questions:

1. Is there a significant gain in the participants' knowledge of the concept and elements of curriculum alignment as shown by pre and posttest workshop scores?

2. What are participants' perceptions of the curriculum alignment concept and how is it applied in their colleges post-workshops as explored through participant interviews?

2. CURRICULUM ALIGNMENT BACKGROUND

A. The Curriculum Concept in Context

An exact definition of curriculum would not encompass the concept or understanding of all educators. Some academics have a concise definition of the term as the subjects, courses, and resources of an academic program while others consider comprehensive elements of the course which is negotiated and dynamic (Annala, Lindén, & Mäkinen, 2016). In their phenomenographic study, Fraser and Bosanquet (2006) focused on the meaning and complexity of the concept of curriculum as understood by faculty members. The researchers found four categories of faculty members' descriptions about their concept or meaning of curriculum: a) a defined "structure and content" of a single unit (product-oriented); b) structure and content of the larger academic program based on graduate outcomes (product-oriented); c) students' learning experiences within a teacher-led framework (process-oriented); and, d) faculty-student integrated and negotiated processes of teaching and learning (process-oriented) (p. 272).

In the context of the present study, the concept of curriculum for most faculty members and the majority of faculty education focuses on the second category listed above (structure and content of the larger academic program with a clear emphasis on student/graduate outcomes). This view of curriculum stems from the set structure of most academic programs, which is often top-down through processes that "are centrally initiated and controlled" by experts, i.e. curriculum committees (El-Okda, 2005, p. 34) and the national quality templates and measures used in program development (ETEC, 2018). A few faculty members have developed their concept of curriculum into the more process-oriented approach of curriculum based on students' practical learning experiences, but this approach has been taken on an individual faculty member basis. Therefore, faculty education is key "to develop a shared language and understanding of curriculum" (Fraser & Bosanquet, 2006, pp. 282-283) as a concept.

A critical view of curriculum relevant to the Saudi context is culturally responsive curriculum (CRC). Culturally responsive teaching/curriculum is described by Gay (2002) as "based on the assumption that when academic knowledge and skills are situated within the lived experiences and frames of reference of students, they are more personally meaningful, have higher interest appeal, and are learned more easily and thoroughly" (p. 106). Abdal-Haqq (1994) added that "curriculum that is culturally responsive capitalizes on students' cultural backgrounds rather than attempting to override or negate them" (p. 2). In a critical analysis of EFL textbooks in Saudi universities, Alghamdi (2018b) concluded that the curricula, resources, and even instructors' practices were often not culturally responsive or part of the students' real-life experiences, which affected their engagement and even their perceptions of their culture as inadequate somehow.

A similar sentiment could be stated for faculty members engaging in faculty education. Faculty members in the Saudi context come from a multitude of countries. Textbooks and curricula are often imported from Western countries, particularly in programs where English is the Medium of Instruction (EMI) such as in the foundation year, health, engineering and computer fields (common academic areas in Saudi). Therefore, elements of these curricula are 'foreign' or not familiar to a number of the faculty members, many of whom are from the wider region (Alghamdi 2018a). Hence, there are two culturally relevant aspects at work in most Saudi higher education institutions: international faculty *and* international curricula. As highlighted by Hamdan (2014) in her qualitative study on culturally relevant pedagogy in Saudi higher education, the instructor's cultural background and experiences is directly linked to the underlying pedagogical assumptions and practices he/she uses in the classroom. However well-evidenced and supported, international curricula are not sufficiently effective or implemented unless relevant to and negotiated with the cultural context for both faculty members and students (Gay, 2002; Alghamdi, 2018b). Perspectives and concepts of curricula differ widely among faculty based on previous experience and background, which highlights the need for faculty education focused on developing a shared understanding and practice of curricula (Abdal-Haqq, 1994).

B. Curriculum Alignment in Context

Biggs and Tang (2011) explained the main elements of constructive alignment (CA) as intended learning outcomes, teaching/learning activities, and assessment tasks (p. 100). In the Saudi higher education context, the program and course curricula are set by the college within a national quality assurance framework focused on program and course specifications (ETEC, 2018). These specifications list, as part of completion of the forms, alignment of outcomes with teaching strategies and assessments (in that order) without specifically using the terms constructive or curriculum alignment. Hence,

alignment is often viewed as little more than linking outcomes to teaching activities and assessment within the quality domain.

Faculty education in this context then attempts to expand CA beyond the sole purpose of quality assurance, with an initial focus on learning outcomes that have clear, measurable actions based on the national (NCAAA, 2015) and cognitive domains (Krathwohl, 2002). Biggs and Tang (2011), as in the Saudi context, stressed the importance of learning outcomes as central to constructive alignment: "Get them right and the decisions as to how they are to be taught and how they may be assessed follow" (p. 104). Alfauzan and Tarchouna (2017) studied the application of constructive alignment on a theoretical translation course at a Saudi university and found that a well-designed curriculum can maximize learning outcomes.

In addition to learning outcomes as the foundation for CA in the initial session, teaching strategies, lesson design and assessment form the other focused sessions in this context. The basics of the Backward Design approach to constructive alignment are highlighted in the CA sessions as the theory "goes one step beyond constructive alignment to specify the order of executing the three components aligned" (Sideeg, 2016, p. 173). This well-known approach, associated with Wiggins and McTighe (1998, 2005), emphasizes a three-phase design of 1) desired results (outcomes); 2) evidence of results (formal and informal assessment); and 3) learning experiences and instruction. Backward Design suggests that curriculum planners begin with the outcomes—the 'big' ideas that should be well understood--plan the evidence that supports and aligns with the outcomes, followed by providing the suitable strategies for learning to take place. As Bowen (2017) stated, "Backward Design is beneficial to instructors because it innately encourages intentionality during the design process" (para 4); educators begin planning with the end result in mind. This approach is known to well-read educators in the Saudi context, but not systematically applied or shown in quality assurance documentation. Hence, participants are often learning about Backward Design for the first-time in the CA sessions.

Kabouha and Elyas (2015) studied the constructive alignment of assessment and teaching to course objectives in an English language program at a Saudi university. The authors, in agreement with Biggs and Tang (2011), emphasized the importance of the learner in the constructive part of the curriculum and the role of the educator in alignment to create the appropriate learning opportunities and assessment tasks. The researchers posited that "we should focus on student learning rather than teaching in order to improve students` college experience; this can only happen through implementing constructive alignment in learning and teaching" (Kabouha & Elyas 2015, p. 88).

Anderson (2002) concluded that educational institutions hold accountability and should demonstrate that students have been given sufficient learning opportunities based on the curricular criteria institutions set. This is particularly relevant in Saudi higher education where curricula should be adapted to the various educational and, as mentioned previously, cultural backgrounds of the students, which can be a challenge (Hamdan, 2014). Students are admitted into universities largely based on norm-referenced, standardized examinations from highly varied educational institutions and backgrounds (private/public schools, languages of instruction—e.g. Arabic, English, French, etc. international curricula—e.g. British, French, American, Indian, etc.) These diverse cultural and school backgrounds emphasize the need for aligned curricula in the higher education context that is well-understood by and constructive for faculty members, beyond the basic understanding or alignment on forms, which again highlights the need for relevant faculty education on the concept.

3. METHODOLOGY

A. Study Design

A mixed-method research design incorporating both quantitative and qualitative measures (Creswell, 2014) was used in this study to explain the participants' knowledge and perceptions of the curriculum alignment workshops. The design was sequential in two phases: 1) a pre/posttest measured the participants' basic knowledge; and, 2) semi-structured interviews investigated participants' perceptions and application of the workshops. The researchers found that pre/posttest results alone, the normal practice at the University, were limited and unable to provide a full representation of the participants' perceptions and/or application of the concepts. Therefore, a mixed-method approach was employed to explore the perceptions of the faculty members upon their return to the colleges as well, combining both statistical and interview analysis to form a pragmatic view of how the workshop information and application was actually being used (Creswell, 2014).

TABLE 1. CURRICULUM ALIGNMENT WORKSHOPS.

C. Participants

No.	Workshop Area	Focus of Outcomes	Duration (hrs)
1	Curriculum Planning and Alignment	• components and importance of course planning and constructive alignment • hierarchy and relationship between goals, objectives, and outcomes • well-stated intended learning outcomes that reflect the course goals and quality standards • the relationship between learning outcomes, and the selection of varied teaching and assessment strategies	2.0
2	Teaching and Learning Strategies	• teaching and learning methods, strategies, and activities • criteria for choosing methods and strategies that facilitate active learning • effective teaching and learning classroom strategies	2.0
3	Lesson Design	• alignment with national learning domains • Backward Design framework (Wiggins & McTighe, 1998, 2005) and curriculum, assessment and instruction • elements of a lesson plan	2.5
4	Assessment and Constructive Feedback	• concepts and importance of assessment • kinds/measures of assessment and use for different purposes • effective and alternative assessment approaches for classroom use • alignment of assessment measures with learning outcomes and teaching strategies • constructive feedback and evaluation	3.5
Total	4 workshops	15 outcomes	10 hours

B. Study Context

The study context was a faculty development unit at a large public university in Saudi Arabia. The primary purpose of this unit is to enhance faculty members' awareness, knowledge, and practice in teaching and learning—i.e. faculty education. The unit serves nearly 20 colleges and 3,000 faculty members. For this research, four workshops introduced and extended the concept of curriculum alignment as shown in Table 1. Each workshop represented a specific element of alignment, which built on the previous element. The workshop content and activities, originally developed in 2013, have been updated and revised twice in the last five years by experts in curriculum and pedagogy and teaching and learning. The content material for each workshop consisted of a presentation, activities, and audio/visual materials (available via a course management system), and were delivered by a team of University facilitators. These facilitators used the same content to maintain a high level of program quality and consistency.

University faculty members who received approval from their academic supervisor and agreed to the use of their data for the purpose of research were the participants in this convenience sample ($n = 202$; see Table 2). Due to cultural norms, separate workshops for men and women are the practice at the University and allow participants to participate openly. The interview participants ($n =10$) were purposively chosen by the researchers as active and diverse members who attended the workshops and represent the four main academic areas of the university and the general courses (foundation year) department.

TABLE 2. PRE-TEST/POST-TEST PARTICIPANT AND COHORT INFORMATION.

	Participants	Cohorts
Female	129	8
Male	73	6
Total	**202**	**14**

Table 3 presents characteristics of the interview participants including the academic area/department, estimated number of teaching and learning professional development workshops attended previously, and the number of years of experience overall. The number of workshops was a key characteristic for interview participants as the researchers sought active members of the faculty community to express their opinions openly, thoroughly and knowledgeably on educational concepts. Further, to underscore the diversity, the interview participants represented eight of the 14 cohorts and seven different nationalities. A cohort, in this study, represented a group of faculty members who attended the sessions at the same time from beginning to end. The majority of this study's participants are women (64%) as the majority of faculty members and students at the University are women (56% and 75% respectively).

TABLE 3. INTERVIEW PARTICIPANT DEMOGRAPHIC INFORMATION.

Participant*	Academic Area	Workshops (n)	Experience (yrs)
Amelia	Arts & Education	30+	21
Emily	Arts & Education	15	6
Hannah	Admin Sciences	30	6
Martina	Admin Sciences	15	3
Maha	Health & Medicine	30+	20
Shereefa	Arts & Education	30+	23
Sultana	Admin Sciences	20+	6
Hamad	Engineering	20+	16
Abdullah	General Courses	30+	18
Isaac	Engineering	30+	40
Estimated average =		25+ workshops	16 years

*pseudonym

D. Instruments and Data Collection

Two main instruments were used to collect data in this research, a multiple-choice pre/posttest instrument and semi-structured interviews. Although not a main instrument, the researchers' perspectives and inter-researcher discussions, as is common in qualitative research (Creswell, 2014; Merriam, 2009), are woven throughout the study; both researchers have facilitated and participated in the curriculum alignment workshops for the last several years.

1) Pre/Post Test

A pre/posttest instrument consisting of 16 multiple-choice items based on four workshops was used for this study. The items were designed and validated for content by two educational experts based on the workshop outcomes and revalidated for content alignment by a third educational expert. The number of items was limited by the pre/post-test time and the duration of the individual workshops (as shown in Table 1). The internal reliability of the items was found to be acceptable as shown by Cronbach's Alpha = .72 (George & Mallery, 2003).

The pretest was administered before the workshops, and the posttest was administered immediately post-workshops in a traditional, face-to-face setting. Participant and cohort data along with their responses for a possible total of 16 points were then added to an Excel file for initial descriptive analysis. The responses were entered anonymously in the dataset, only identified by cohort, without names or identifiers, as per departmental policy. The pre/posttest data were collected over a period of five years between 2014-2019.

2) Interviews

The semi-structured interviews were based on ten questions about the 1) 'takeaways' from each of the four workshops, 2) application of the workshops and program in their real practice, and 3) the strengths, limitations, and advice for the collective curriculum alignment workshops overall. The interviews were conducted in English and Arabic (depending on the participant's language preference) within one year of participants' completion of the workshops (majority within six months). As the qualitative phase of this research explores the application and perceptions of the workshops, it was important that some time pass before interviews. The interviews were conducted in a quiet space, either by telephone or face-to-face, and lasted approximately 30-45 minutes. The researchers then transcribed the interviews with the exact wording (without grammatical or semantic changes) to ensure the accuracy and authenticity of the participants' descriptions and narratives. Each participant signed a consent form prior to or immediately after the interview and was sent the interview transcript upon request.

D. Data Analysis

As this study employed a mixed-method approach, two main methods of analysis were used. For the pre/posttest data ($n = 202$), basic descriptive statistics and a two-tailed paired t-test using Excel and SPSS were performed to analyze and measure the difference in pre and post-test participants' responses for each workshop and the combined data for the four workshops overall. The participant interview data ($n = 10$) were initially open-coded (Corbin & Strauss, 2007) and then reread, discussed between researchers, and recoded. The recurring codes were combined into clear patterns until eventual themes emerged. As the majority of codes had been revealed by the sixth interview and participants represented the majority of cohorts (eight of 14 cohorts), the researchers concluded that data saturation had been attained (Fusch & Ness, 2015). Further, after each interview, the researchers, both as workshop facilitators and former participants, discussed the interview responses and meanings in relation to each other and the quantitative data. The pre/posttest and interview responses, along with the researchers' debriefing (Creswell, 2014) after data collection provided

triangulation of the results (O'Donoghue & Punch, 2003) and informed the overall interpretation of the data.

4. FINDINGS

This research investigated two main questions after participants attended four workshops focused on CA: 1) possible gain in participants' knowledge of CA as measured by a pre/post-test; and, 2) participants' perceptions and application of CA post-workshop as evidenced by semi-structured interviews.

A. Participants' Knowledge of Curriculum Alignment

As shown in Table 4, the descriptive statistics and t-test revealed a significant difference between the pre-test and post-test scores overall (pre-M = 5.99; post-M = 8.57; Mdiff =2.58; t (201) = 11.94; p < .01). The results further showed an increase between the pre and posttest means in each of the four workshops indicating an increase in participants' knowledge in the area of CA and in each of the areas of curriculum presented.

The results showed the average percentage of correct answers before the workshops was 37%. Post workshop, the results illustrated that participants answered correctly to just over half of the items overall (average 54% correct) and less than half in three of the four workshop areas with the exception of lesson design. The areas with the most significant gain, assessment and constructive feedback and lesson design, were also the two areas that had the longest duration of training. While the results show a significant statistical gain, the low percentage correct overall still poses questions about the participants' knowledge and understanding of CA, which will be further explored in the interview findings and Discussion.

B. Participants' Perceptions and Application of Curriculum Alignment

While the pre/post-test indicated a significant gain in the understanding of CA, the researchers, who having facilitated the sessions and observed colleagues, sensed that the statistics revealed only one immediate and partial aspect of understanding the concept. Therefore, this research also sought to explore the participants' (n = 10) perceptions and applications of curriculum alignment after the workshops, upon return to the colleges. As found through a content analysis of the interview data, three recurring themes and two subthemes emerged: 1) enhanced teaching strategies as the most prominent and memorable highlight from the workshops; 2) a basic knowledge and awareness of the concept and elements of curriculum alignment (subtheme: heightened awareness of learning outcomes); and, 3) minimal change or application of curriculum design post workshop (subtheme: lack of cohesion between and application within workshops).

TABLE 4. ANALYSIS OF CURRICULUM ALIGNMENT PRE/POST INSTRUMENT (*N* = 202; *P* < .01).

	Workshop	No. Items	Pre M (SD)	Pre % Correct	Post M (SD)	Post % Correct	t value
1	Curriculum Planning & Alignment	3	1.00 (.76)	33 %	1.36 (.72)	45%	5.75
2	Teaching Strategies	3	1.03 (.83)	34 %	1.46 (.93)	49%	5.45
3	Lesson Design	4	2.46 (1.08)	62 %	3.19 (1.35)	80%	8.28
4	Assessment Constructive Feedback	6	1.50 (1.09)	25 %	2.56 (1.01)	43%	8.71
	Overall	**16**	**5.99 (2.47)**	**37 %**	**8.57 (2.41)**	**54 %**	**11.94**

Theme 1: Enhanced Teaching Strategies

The most prominent theme that emerged was enhanced teaching strategies. The participants vividly and consistently described teaching strategies (including formative assessment) from the workshops as a major highlight or 'takeaway,' which has since been applied in their classrooms. Participants perceived either, explicitly, that teaching strategies was the most impactful workshop for their practice or, implicitly, that the strategies of instruction used throughout the four workshops influenced their way of teaching. Participants could recall strategies and associated activities, share detailed memories of a workshop activity or event, and further discuss how these strategies were modified and integrated in their classrooms.

Martina recalled the active learner strategies that she saw in the workshops that she now applies in her classroom:

He (the facilitator) didn't explain it. He found that everyone had a comfort zone with a group that they formed from the beginning and then he managed to shuffle the groups so we would mingle and probably get to know each other. I was actually excited to apply that…you ask a question to draw their attention and engage them more. I'm applying that right now.

Hannah had similar memories of specific strategies applied in the workshops: *"First I will decide what is the teaching strategy. After the lecture, quick questions like Kahoot! or exit ticket to see what they got from me."* Sultana mentioned the "*flashcard concept and guessing the answers on the board. I feel there is a need for these kinds of activities*" but, she also noted, "*we don't get enough time to have this type of activity*." Emily concurred explaining that "*the teaching strategies had the greatest impact on me*

long term. To know the diversity of teaching strategies and the appropriate strategy for the topic helps with each lecture and raises the motivation among students."

The challenge of integrating more active strategies while covering the necessary course content (i.e. enough time) was mentioned by several of the interview participants. However, Isaac emphasized the change in his ideas about teaching strategies and content coverage post-workshops:

We are fond of giving information, pumping information into students' minds. Now, it seems it's not the right way--15 minutes then he turns off, and then we must engage him again. Changing the methods and strategies of teaching--making the class engaged with every one of them; the class now is different.

Maha linked the teaching and learning strategies to curriculum by saying that the "*teaching and learning strategies and the [curriculum] committee work intertwines. It [the sessions] changed it and polished it. The aim for us as a program is that we get away from the traditional type of teaching and share this knowledge with the curriculum committee."*

Theme 2: Basic Concept of Curriculum Alignment

All ten interview participants mentioned the concept and basics of CA as a significant part of the workshops, one that renewed or clarified their view of curriculum and the important principles of alignment. Specifically, learning outcomes, teaching strategies, and assessment were mentioned as key elements, with particular emphasis on learning outcomes at the core of CA. The majority of interview participants also mentioned that they had worked with or served on the curriculum committee in their colleges at some point in their careers.

Hannah said that, for her, CA is "*how can we improve learning outcomes-write and align…I think the learning outcome should be aligned with our assessments and our teaching methods.*" Similarly, Maha mentioned the importance of CA as a "*methodology and how to construct program and course learning outcomes, the choice of words, and the use of [national framework] domains."* Writing or constructing learning outcomes, an activity emphasized in the sessions, was mentioned by the majority of participants.

Amelia, who has a strong background in curriculum and several years of higher education experience, perceived the workshops from a more holistic approach:

I feel that curriculum is a living thing. So the more experience, the more it becomes different, and you have a different perspective every time you experience it. After the workshops, I believe it's not about the instructor but the students. Remember, it's constructive so every student has their angle of the curriculum.

Martina summed up the overall view from the majority of participants on the concept of CA after the workshops:

I'd say that I really didn't understand the connection between the course objectives and the course learning outcomes. So, I had to work my way through to understand the connection, but now it makes more sense. It's more visible. It's point a-b, the course is linking between a and b and what we teach every day is what's in between.

It is noteworthy to mention that only one of the interview participants mentioned constructive alignment and the connection between alignment and constructivism, although it is discussed explicitly in at least two of the workshops. The other participants all mentioned CA only, without the link to the word 'constructivism' or the theory of constructivism.

Theme 3: Minimal Change or Application in Curriculum Design Concepts

Faculty members gained a clear concept of CA as illustrated in Theme 2; however, once the participants returned to their colleges, the planning and elements of CA (including Backward Design) used explicitly in and integrated throughout the workshops were not being applied regularly in the courses. According to the interview responses, some participants are applying the concepts on their own at the course level, but it is not being applied consistently at the program, department, or college level.

As Isaac noted, *"Me, as an individual, I do it [backward planning] as a small exercise but not for the program. Outcomes, teaching methods, assessment is the usual way. People are adding to what they know and they are reluctant to change."*

As mentioned by the majority of interview participants, while most educators and programs at the University begin curriculum planning with the outcomes (which is heavily emphasized in the quality assurance forms and framework), the assessment of the outcomes or evidence of the results is often the last item planned—often just a few weeks before the final examinations. Abdullah, who has extensive experience in higher education in the UK, mentioned that although CA and Backward Design are not applied across the curriculum, faculty members' perception of the concept is changing based on the work of individuals and teams:

We have to teach this and cover this page. But you have to measure it, so begin with how to measure it. Then look at all of the things that come under it. Now, we have a core team and for those of us developing this and trying to change, there's more acceptance of it. But there's still some of us don't who understand the difference between assessment and teaching.

Several of the participants mentioned the lack of cohesion between the CA modules as a possible reason or obstacle to the application of the concept in the programs. Martina speculated that while having multiple trainers can

be beneficial, a 'single person' or one designated trainer for all workshops might show more connection and cohesion between workshops and concepts.

Abdullah mentioned a different approach to providing cohesion and application in the workshops:

I think personally… would be good for a case study, learning through case studies talking about the different elements. So here's an example and how they go about doing it, how to test it, you bring the learning…the whole process through that kind of example. It is powerful.

5.   DISCUSSION

While the pre/posttest results showed a significant gain in the overall concept and elements of CA, the participants' interview responses expressed their perceptions and real-life application months after the workshops.   These responses illustrated enhanced use and awareness of active teaching strategies; an increased awareness of the concept and elements of curriculum; however, a minimal change or application of curriculum design and alignment post workshop.

The pretest data suggested that faculty members entered with a limited knowledge of CA (37% average) with the exception of lesson design (62% correct). Both the pre/posttest results and interview data indicate that participants had strong prior experience in the area of lesson design, an area focused on practical teaching which faculty members apply weekly in their classes. Posttest, participants answered correctly to just over half of the items overall (average 54% correct) and less than half in all of the workshop areas except lesson design (80% correct). While the gains in each area were significant statistically, the results indicate that the intensive workshops did not make a marked change in the participants' knowledge base—knowledge was limited pre and posttest in three of four areas. The most plausible reason for limited knowledge in these areas could be due to the fact that CA, as faculty development in Saudi (Alnassar & Dow, 2013; AlRweithy & Alsaleem, 2015), is a fairly new concept for faculty members, facilitated by quality measures and accreditation requirements (NCAAA, 2015), often referred to as a 'quality' area associated with course/program specifications. Therefore, alignment means linking outcomes, teaching strategies, and assessment on the appropriate form. The foundation knowledge or even terminology for CA elements is still not well-known in this context.

Further, faculty members often prefer 'practical' applications, not abstract or theoretical discussions (which is indicated in the strong lesson design knowledge base). In agreement with several scholars (Gay, 2002; Hamdan, 2014; Alghamdi, 2018b), culturally relevant teaching is one relevant to and negotiated with the immediate context. As per the researchers' observations, one of whom has facilitated abroad and in the Saudi context, and the

interview responses there is an increased link between activity and concept learning in this faculty development context. This may imply that there is not enough active facilitation focused on the concepts in the CA sessions. These results also indicate workshops can support and clarify educational practice but extended, cohesive faculty education including "layers of facilitation and assessment," including practical application is needed to improve faculty learning and integration into practice (Muammar & Deraney, 2019, p. 45). As discussed by the participants, the activities and formative assessments were not consistently and cohesively 'aligned' with the concept of curriculum, which may further explain the limited gains in the posttest results. There was no connected application between workshops—one unit to design from beginning to end or a relevant curriculum to be analyzed, for example.

The application of classroom teaching strategies was the most prominent theme and workshop discussed in the interviews. The participants integrated the activities and strategies used and practiced in the workshops in their own classrooms indicating the importance of active and relevant learning (Bonwell & Eisen. 1991; Silberman, 1996) in faculty education. While much has been researched nationally about the pedagogical shift from traditional teaching to student-centered instruction (Alamri, 2011; Al-Ghamdi & Tight, 2013; AlRweithy & Alsaleem, 2015), faculty education also needs to be participant-centered where the faculty member is the constructor of his/her own pedagogical learning, which not only benefits the faculty member but also ultimately the students (Alghamdi 2018a; Gibbs & Coffey, 2004).   In this study, teaching strategies knowledge was minimally gained but teaching strategy application, which participants were experiencing and actually doing throughout all four sessions, had a stronger perceived impact.

While participants understood the concept and basic principles, participants neither clearly linked CA to the theory of constructivism nor regularly applied the *Backward Design* framework (Wiggins & McTighe, 1998; 2005) in their programs upon return to their colleges, with few exceptions. Both concepts, however, were explicitly taught and discussed in the workshops (as shown in Table 1). The reasons behind the minimal application of the concepts learned, as described by participants, included the lack of authority to make a program/course change or reluctance of faculty members and leaders to change the current approach to curriculum design. This concurs with the idea that often, higher education institutions in the region use a top-down approach (El-Okda, 2005) which is not in large part constructed by the teaching faculty or co-constructed by the students (Kabouha & Elyas, 2015). This also supports the point of Biggs (2014) that CA needs supportive and visionary leaders at all levels: "for CA to work properly, then, it needs to be embedded in a supportive culture, at each of departmental, faculty, institutional levels and even national levels (p. 10).

In fact, the majority of programs and even faculty education in this context, as suggested by the participants' responses, focus on the product rather than the process of curriculum as a changing and dynamic means of faculty and student reflection (Fraser & Bosanquet, 2006). The reasons behind the product-oriented focus is often the rigidity of the academic study plans, the erroneous comparison of quality assurance forms to curriculum alignment, the traditional top-down approach to curriculum design as mentioned, and the lack of faculty education on the concept of CA, which is illustrated by the pre/posttest results. Further, the 'imported,' international curricula (Alghamdi, 2018b; Hamdan, 2014) and resources in many of the disciplines may or may not represent or be 'responsive' to the culture of Saudi Arabia or the varied cultures of the faculty members, who are implementing the curriculum. In the interview data, participants discussed different approaches to and terminology of CA from various cultural backgrounds (e.g. Canadian, British, Sudanese, Saudi, etc.). Fraser and Bosanquet (2006) concluded that "this lack of a shared understanding has the potential to impact on the implementation of curriculum change and development" (p. 270).

The lack of cohesion between the curriculum alignment workshops, as mentioned directly or indirectly by the majority of interview participants, was evidenced by two recurring sub-themes: emphasis on learning outcomes and lack of application of curriculum concepts between and within workshops. The majority of participants, when asked to recall and discuss the intro to CA workshop mentioned learning outcomes as the main element without necessarily connecting outcomes to teaching strategies and assessment (two other workshops) as part of the concept. In most cases, participants included the other elements as part of CA only when prompted by the interviewer. The main application in that workshop is writing and revising clear learning outcomes, which again emphasizes the fact that what the participants actually 'do' or apply is remembered and used long past the actual workshop.

Study Limitations

The main limitations of this study are the test administration procedures and the study context of one university. During the pre/posttest administration, the amount of time given to answer the questions varied and was limited, sometimes with interruptions and participants answering in groups rather than individually, which may have affected the results. It is recommended to have a set, quiet time before and after the workshops without interruption and accompanied by explanation of the importance of individual responses. The research was conducted at one university; therefore, for improved generalizability, future research could include other faculty education programs in Saudi at the national level that highlight curriculum.

6. IMPLICATIONS FOR FACULTY DEVELOPMENT

Beyond the individual faculty members' concept of CA, there is a clear need for competence in the area. The researchers concur with Muammar and Deraney (2019), who studied faculty education in the Saudi context, "There is a need for instructional standards which are clearly linked to faculty education and measured for effectiveness, … the need for defined, systematic standards and framework for faculty education and competencies at the macro or national/institutional level"(p. 45). The proposed instructional standards and overarching framework should include curriculum-related competences that would first include the value and awareness of the concept. Individual faculty members' and also program leaders' conceptions and approaches to curriculum design, beyond the misconception of CA as mere completion of quality standards or forms, can have a significant impact on program and institutional colleagues' perceptions and curricula as well. Clearly outlined faculty competences in curriculum would provide the foundation and collective shared meaning that is needed to build the concept into real practice.

Further, facilitating authentic CA means including authentic, sustainable application that extends into the programs and colleges. While individual faculty members are implementing constructive alignment, program alignment at the college and institutional level can be a complex, administrative issue (Biggs & Tang, 2011). As Meij and Merx (2018) posited, "within the context of a single course or module, alignment can be realized fairly easily, creating alignment at the program level proves to be more difficult"(p. 221). For this reason, application of alignment could be done systematically within programs involving joint teams (with team members from various administrative levels) who integrate quality, accreditation, and administrative standards with faculty education (Biggs & Tang, 2011) which has proved successful in several universities around the world such as Hong Kong and Malaysia (Biggs, 2014) and may be relevant to the Saudi context. This would also allow for continuity of the concepts and sustainability of alignment throughout the programs.

7. CONCLUSION

As explored by this study, participants' basic knowledge of CA was significantly increased as well as their teaching strategies enhanced after attending four faculty education sessions focused on curriculum alignment. However, the study findings also indicated that the depth of knowledge and subsequent CA application in the colleges and programs post-workshops were minimal.

Moving forward, effective faculty education should focus on deepening the concept of CA to include a more constructive, process-oriented approach that engages program and curriculum leaders as participants and active agents of curriculum development. Moreover, CA faculty education cannot be thoroughly cohesive without a clear

framework or standards for curriculum-related faculty competences that integrate educational, field-specific, and culturally-relevant scholarship and practice. Finally, faculty education that includes regular follow-up in and coordination with the programs and colleges could inform future faculty education programs, create a shared understanding of CA, facilitate enriched curricula, and, ultimately, improve student achievement of learning outcomes.

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