

Saudi University Faculty Members Perceptions of Teaching Support and its Relationship  
to their Perceptions of Teaching Efficacy

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## **Abstract**

Recognizing the integral role of faculty in the success of any higher education system, this study examines the relationship between the perception of university teaching support and several demographic factors to the perceived teaching efficacy among faculty members at King Abdulaziz University (KAU) in Saudi Arabia. This study surveyed a sample of full-time faculty members at KAU in Spring 2018. The theoretical foundation of the study was based on teacher efficacy (Bandura, 1977, 1986, 1997), and on research on faculty perceptions of teaching support and teaching efficacy (Chang, Lin & Song, 2011; Chang, McKeachie, & Lin, 2010).

The findings support prior research and revealed that perceived administration and peer support were related to faculty teaching efficacy, such that faculty with higher perceived administration and peer support were more likely to believe that they were more efficacious in teaching. Several background variables namely, being a senior, international or a non-STEM faculty member, or having obtained a doctoral degree from USA or Egypt were significant predictors of faculty teaching efficacy. The study did not confirm relationships between faculty teaching efficacy and their perceived teaching resources and pedagogical training, gender, rank, and highest degree. The implications of the findings suggest that there should be a consideration of university support involving data-driven pedagogical training, mentoring program, and an orientation program for novice faculty at KAU that provide a welcoming and friendly working environment where faculty can communicate and support each other as well as introduce faculty to the beneficial teaching resources at KAU. Further studies of teaching support components variables that did (or did not) correlate with faculty perceptions of teaching efficacy are needed at KAU and other Saudi Arabia higher education institutions.

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## Chapter 1

### Introduction

Faculty members at any university play an essential role in higher education regardless of the nature of their appointments. This is due to their roles and responsibilities in the academy either as teachers, researchers, or through other forms of service (Gappa, Austin, & Trice, 2007; Weber, 1999; Winefield, Gillespie, Dua, Hapuarachchi & Boyd, 2003). Comparably, faculty members at Saudi Arabian (SA henceforth) institutions of higher education, to some extent, undertake the same roles and responsibilities in terms of teaching, research, or service, which is also vital to the shared mission of SA institutions (Al-Ghamdi & Tight, 2013). Researchers in SA higher education conclude that the overall quality of SA colleges and universities and their ability to successfully perform their educational responsibilities are inseparably linked to the commitment and competency of faculty members (Alnassar & Lee Dow, 2013; Smith & Abouammoh, 2013).

One of the issues that SA higher education encounters nowadays is the performance of faculty members as teachers. A study about the SA higher education system, which is extraordinarily centralized and developed by a government agency, the Ministry of Education (ME), found that the ministry regulations prioritize research in favor of teaching (Qureshi, 2006). Faculty members at SA institutions tend to focus more on research than on teaching since research pays dividends in terms of promotions, monetary benefit and status (Qureshi, 2006; Smith & Abouammoh, 2013). A number of studies surveyed SA students' perceptions about the leading reasons of their failure, low achievement, and even college drop out in several Saudi colleges and universities (Al Casey, 2012; Al habsi, 2000; Al-Jahani, 2012; Al Rshod, 2001; El Masry & Alshaya, 2009; Joud & Zayed, 2012; Mansi, 2004); some of the major findings of these

studies were issues related to poor teaching performance due to academically unqualified faculty, lack of technical resources, insufficient student-faculty relationship, and the implementation of ineffective and outdated methods of teaching and assessment.

These challenges that relate to faculty teaching performance and, in turn, students' low achievement inspire many researchers, including me, to examine all possible solutions and root out theoretical frameworks that might help uncover variables influencing these problems. The research literature focusing on Saudi Arabia has not focused on the notion of Teaching Efficacy as a framework, despite findings from other countries that it is related to faculty teaching performance ((Hoy, 2000; Klassen & Chiu, 2010). A goal of this study is to use the findings to implement some practical ideas that might help improve faculty members improve their teaching performance and, in turn, influence students' achievement. This study, to some extent, is a replication of a study on faculty perceptions of teaching support and teaching efficacy in Taiwan conducted by Chang, McKeachie, and Lin in 2010, except for the fact that my study is not comparative. In their study, the researchers examine the faculty perceptions of teaching support, teaching efficacy, and the relationship between these two perceptions at public and private universities in Taiwan. Results of the study showed that faculty members at public universities demonstrated higher levels of teaching support and teaching efficacy than faculty members at private universities. The correlation between perceived teaching support and teaching efficacy was higher for faculty at public universities than faculty in private universities. The present study focuses on faculty members at King Abdulaziz University in SA to determine their perceptions of teaching support and some of the characteristics that predict their perception of teaching efficacy.

## **Purpose of study**

The purpose of this research project is to survey Saudi Arabian faculty members perception of university teaching support and faculty demographics background to find out their relationship to the notion of faculty teaching efficacy at King Abdulaziz University (KAU). Perception of teaching support includes administrators support, peers support, teaching resources support, and teaching training programs. Faculty demographics background includes professional rank, years of teaching experience, STEM/non-STEM, gender, international vs. SA faculty member, highest degree, and place of obtaining the highest degree. Finally, the composite of faculty teaching efficacy variables includes course design, instructional strategy, technology usage, class management, interpersonal relation, and learning assessment. Studies that examine SA faculty's teaching efficacy are very limited in the context of SA higher education. The influence of such a topic on overall faculty success is unquestionably important in many aspects of teaching performances (Bandura, 1997). This study aims to contribute to the literature by exploring the experiences of SA faculty members at King Abdulaziz University (KAU). It tries to understand their perception of teaching efficacy and its correlation with university teaching support and several other faculty characteristics.

Most of the studies about teaching efficacy are dedicated to senior high, junior high, and elementary school teachers (Kinsey, 2006; Lin, & Lu, 2010; Tschannen-Moranand & Hoy 2002; Tschannen-Moran & Hoy, 2007; Tschannen-Moran & Barr, 2004), and very few studies have investigated the influence of teacher-efficacy in the population of college-level instructors (Chang, Lin & Song, 2011; Chang, McKeachie, & Lin, 2010). In fact, the relationship between perceived teaching supports and teaching efficacy among the university faculty is still unknown or very limited. Without information about this connection, the teaching development and

teaching support may not meet the desired teaching targets (Chang et al., 2010; Perepiczka, Chandler & Becerra, 2011). In the context of SA higher education, there are no studies that focus on surveying the notion of faculty teaching efficacy, let alone its correlation to teaching support.

One of the key concerns for the SA Ministry of Education today is to improve SA higher education institutions, and one component of this improvement trend is developing the teaching performance of faculty members (Mazi & Altbach, 2013). Notably, numerous reports have noticed a decrease in SA faculty members' teaching effectiveness at a number of Saudi colleges and universities (Al Casey, 2012; Alhabsi, 2000; Al-Jahani, 2012; Alrshod, 2001; El Masry & Alshaya, 2009; Joud & Zayed, 2012; Mansi, 2004), and examined the causes of Saudi students' failure in higher education and found that academically unprepared faculty, dearth of resources, and generally the lack of essential teaching effectiveness skills are among the leading reasons for students' failure. Moreover, many Ministry of Education officials have begun to call for faculty development plans in several higher educational institutions to be focused on the teaching part of faculty development (Darandari & Murphy, 2013).

Given these previous challenges and dilemmas and knowing the importance of faculty teaching efficacy, this study aimed to explore the concept of faculty teaching efficacy and its correlation to university teaching support in the context of Saudi higher education. In so doing, this study tries to determine the factors and the variables that have to do with faculty teaching performance. This is done with the intention to assist leaders and administrators to build sufficient faculty teaching development programs. These development programs could help improve faculty teaching skills and competencies and should consider the aspects and the variables that this study highlighted. This could influence faculty teaching efficacy and help faculty members obtain certain skills and competencies that impact their teaching performances.

## **Theoretical framework**

The power of self-efficacy has been introduced over a quarter of a century ago as a drive to human motivation, learning, and performance in all human life aspects; teaching efficacy is also a key influence on individuals' achievement and influences many areas of a person's well-being in a variety of contexts: including education, sports, and business (Bandura, 1986; Bandura, 1997). However, researchers often distinguish between self-efficacy as a term that was derived mainly from the work of Bandura (1977; 1986) and teaching efficacy that was formulated from the latest Bandura framework (1997), and the work of Tschannen-Moran and Hoy (1998, 2001, 2002).

The literature on higher education shows a fundamental connection between the notion of teachers' (faculty) efficacy and its impact on their teaching performance (Ashton & Webb, 1986; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Marcos, 2008; Tschannen-Moran & Hoy, 2007). Before indulging any further, I would like to first define what is meant by self-efficacy and specifically teaching efficacy, then I will connect that to faculty teaching performances as a proxy to suggest a correlation between the two concepts. Bandura (1997) presented the concept of self-efficacy as the beliefs one has about one's capabilities to carry out the actions required to obtain a desired level of performance in these circumstances. This concept of self-efficacy was introduced in the last 25 years as a goal to human motivation, learning, and production in all their life features as well as a key influence of individuals' achievements in variety of contexts: including education, health, sports, and business (Bandura, 1986; Bandura, 1997). Likely, the stronger the individuals and educators perceive efficacy in any contexts, specifically in education settings, the more ambitious the goals they plan for themselves, the more vigorous their commitment to these goals will be (Bandura, 1993).

Efficacy determines how much effort teachers put forth for any goals or mission they have planned, how flexible they are with handling the failures, and how much depression and strain they sustain in managing demanding conditions (Bandura, 1997; Lin & Lu, 2010). In the realm of teaching and pedagogy, teaching efficacy is introduced as “the teacher’s belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context” (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p.233). Put differently, teaching efficacy is the extent to which teachers have confidence and belief that they can successfully influence student learning including those low achieving unmotivated students (Ashton & Webb,1986; Tschannen-Moran & Anita, 2002; Tschannen-Moran & Hoy, 2007).

Teaching efficacy has been identified as one of the most influential factors in both higher education faculty and K-12 teachers’ teaching performance. Studies emphasize the fundamental correlation between faculty teaching efficacy and faculty teaching performance, and in turn, student performance and comprehensive outcomes (Ashton & Webb,1986; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Marcos, 2008; Tschannen-Moran & Hoy, 2007). A strong association has been reported in the literature between teaching efficacy and faculty general beliefs in their capability in identifying the needs of students with learning difficulties (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Marcos, 2008; Tschannen-Moran & Hoy, 2002). Faculty and K-12 teachers with high teaching efficacy foster effective practices and instructional teaching performances that influence students’ overall achievement, growth, and behavior (Bandura, 1997; Goddard, Hoy, & Hoy, 2000; Hoy, 2000; Klassen & Chiu, 2010; Tschannen-Moran & Barr, 2004). Faculty and K-12 teachers with a high sense of teaching efficacy tend to have higher expectations of themselves and their students’ performances, higher

goal aspirations, and a stronger commitment to their goals (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Morris & Usher, 2011; Tschannen-Moran & Hoy, 2002). In fact, teaching efficacy has been strongly linked to several meaningful educational outcomes such as teachers' persistence, enthusiasm, commitment, and positive instructional behavior (Marcos, 2008; Lin & Lu, 2010; Tschannen-Moran & Hoy, 2001).

Faculty teaching efficacy is influenced by many factors and among these factors is university teaching support. University teaching support is demonstrated by administrative support, peer support, technical support, and teaching training programs. Providing adequate support for teachers and faculty members appears to have an essential impact on strengthening higher education instructors' overall efficacy (Bandura, 1997; Perepiczka, Chandler & Becerra, 2011) and increase their teaching outcomes (Chang, McKeachie & Lin, 2009; Kinsey, 2006; Tschannen-Moran and Woolfolk Hoy 2002). Faculty teaching support in general and specifically administrators and peers support (either personal and emotional support or professional support) tends to improve faculty level of teaching efficacy and, in turn, results in more effective teaching, productivity, commitment and improved student learning outcomes (Brouwers, Evers & Tomic, 1999; Chang et al., 2010; McLaurin, Smith & Smillie, 2009; Rosenholtz, 1989; Scott, 2012). Equally important, technical support (technological resources and instructional usage) seems to be a crucial way to increase faculty's teaching efficacy (Alshammari, Ali & Rosli, 2016; Lin & Lu, 2010; Tschannen-Moran and Woolfolk Hoy 2002).

### **Research questions**

The purpose of this study is to answer the following two main research questions:

- 1) To what extent do various faculty characteristics (professional rank, years of teaching experience, STEM/non-STEM, gender, international vs. SA faculty member, highest

degree, and place of obtaining the highest degree) predict the composite for faculty teaching efficacy (course design, instructional strategy, technology usage, class management, interpersonal relation, and learning assessment)?

- 2) To what extent does faculty perception of teaching support (administrator support, peer support, teaching resources support, and teaching training programs) predict the composite for faculty teaching efficacy (course design, instructional strategy, technology usage, class management, interpersonal relation, learning assessment, and teaching training programs) after controlling for faculty characteristic?

### **Context of the Study**

SA higher education is a highly centralized system that is funded, legislated, and governed by the Ministry of Education. Decentralized institutions that can independently make decisions do not exist in this system. The Ministry of Higher Education was established by the Saudi government in 1975 to take over existing colleges and universities, supervise their strategic plan, and implement new higher education policies and regulations (Ministry of Higher Education, 2017). In 2015, the Saudi government authority merged the Ministry of Higher Education with the Ministry of Education to have one governmental body that controls all education institutions in Saudi Arabia. The Ministry of Education which has one mission: “to provide education to all in an appropriate educational environment within the framework of the KSA Education Policy, as well as to promote the quality of education outcomes, increase the effectiveness of scientific research, encourage creativity and innovation, develop community partnership and promote the skills, and capabilities of students” (Ministry of Higher Education, 2017).

The beginning of higher education in Saudi Arabia began with the establishment of the School of Sharia in the city of Makkah in 1949, while the first university, King Saud University, was founded in 1957 in Riyadh (Alkathiri, 2005; Ministry of Higher Education, 2013). By the 1980s, there were only 4 research universities, 2 religious universities, and some applied schools including 56 colleges (Ministry of Higher Education, 2013). However, by 2015, there were 28 public universities (5 research universities, 4 comprehensive universities, and the rest were either specialized or teaching universities), 10 private universities, 41 private colleges and another 4 higher educational entities (Ministry of Higher Education, 2017). Additionally, those colleges and universities matriculated 1,622,441 students, 48.9% are women, 86.1% undergraduates, 2.4% master students, 0.4% doctoral students, and only .04% international students. These statistics show a huge increase in the number of higher educational institutions and the student body.

The population of faculty members in the context of SA higher education includes professors, associate professors, assistant professors, lecturers (who earns a master degree), teaching assistants (who earns a bachelor degree), and teachers. However, while the assistant professor position accounts for only 25.5% of the population of Saudi faculty members, lecturer and teaching assistant positions together account for 57.7% (Ministry of Higher Education, 2017). This means the majority of faculty members at SA institutions of higher education do not even carry a Ph.D. degree, which might explain some of the weaknesses in teaching and the lack of students' success (Alrshod, 2001; El Masry & Alshaya, 2009; Joud & Zayed, 2012). Between 1980 and 2015, many faculty members were brought into the SA higher education system enabling a remarkable escalation to in the number of faculty members in colleges and universities. In 1980, there were only 4,791 faculty members at SA higher education institutions;

35.2% of them were Saudi faculty and the rest were internationals, while of those Saudi faculty 32.9% were Saudi faculty women (Ministry of Higher Education, 2017). By 2015, the number of faculty members in SA colleges and universities increased to 79,784 faculty members; of whom 66% are Saudi faculty, and proximately half of those Saudi faculty are women (Ministry of Higher Education, 2017).

Between 1980 and 2015 there was a huge increase in the student population while the number of faculty members did not. Data showed that the number of faculty members in SA higher education system is not sufficient enough compared to the student population. By doing a very simple calculation we find that student-faculty ratio is 21:1 compared to the international average of students-to-faculty ratio (16.5:1) that is provided by the World University Ranking that has compared the students-faculty ratio of 800 universities around the world (Minsky, 2016).

Faculty at all Saudi universities, to some extent, play similar roles and responsibilities due to the highly centralized higher education system that is funded, legislated, and governed by the Ministry of Education (The Council of Higher Education, 2007). The first obligation of faculty members is to their classes and students, so faculty are expected to demonstrate professional teaching skills, also they should be honest, have good morals, and abide by the regulations, instructions, codes of conduct, and ethics of the university and the academic environment (The Council of Higher Education, 2007). Faculty should participate in department, school, and university committees. They should also provide service in other areas they feel comfortable with (The Council of Higher Education, 2007). They should constantly improve their knowledge in their field through pursuing scientific research and through expanding the knowledge of their students by supplying them with all the new developments in the subject area as well as for the academia overall through scholarly writing contributions. Faculty at Saudi

higher education institutions are not allowed to work in other institutions or entities without permission from the university (The Council of Higher Education, 2007).

King Abdulaziz University (KAU) is a government-owned and government-run comprehensive institution with a research focus that was established in 1967 as the first private college with two schools. By 1974, it became the first government university (Al-Eisa & Smith, 2013). It got massive attention from the government because it was named after the first king and the founder of Saudi Arabia (King Abdulaziz Al-Saud). King Abdulaziz University is located in the city of Jeddah, which is one of the most modern and liberal cities in Saudi Arabia. The KAU mission is “community responsibility, knowledge development, research, innovation and entrepreneurship” and its vision is “world class university with sustainability and community engagement” (King Abdulaziz University, 2017). KAU offers numerous degree programs in more than 20 schools and three campuses ranging from medicine, engineering, and humanities to religion and linguistics schools (King Abdulaziz University, 2017). Depending on the program, the language of instruction at the university is either Arabic or English. By 2015, the student population at KAU had exceeded 166,286, out of those 45.7% are females, while the number of faculty members is around 7400, and more than 50% of them are female faculty members (Ministry of Higher Education, 2017).

Students and faculty at KAU are at two separate campuses; one for males and the other for females, and both campuses are equipped with all needed resources such as libraries, cafeterias, recreational and athletic facilities. However, the only different school in this education system is the School of Medicine, where both male and female students mostly study in a co-educational system. The present study surveys faculty members at KAU to determine their perception of supports and their level of teaching efficacy.

## **Significance of the Study**

Faculty members play a fundamental role and are considered a valuable asset to any higher education system due to their role and responsibilities in the academia either as teachers, researchers or even their service responsibilities (Gappa, Austin, & Trice, 2007; Winefield, Gillespie, Dua, Hapuarachchi & Boyd, 2003). Generally speaking, colleges and universities heavily rely on qualified faculty members to assist in achieving their mission and fulfill their goals (Weber, 1999). Johnsrud (2008) went further to express the important role of faculty in society by noting “the work they do, the work that discovers, preserves, transmits, and applies knowledge, and the work that transforms individual lives and improves the quality of life of the entire society” (p. 489).

Faculty members in SA higher education specifically play the same role as faculty in American universities. However, SA higher education nowadays encounters many challenges and the performance of faculty as teachers is among these challenges (Al-Ghamdi & Tight, 2013). Researchers in SA higher education concluded that the overall quality of SA institutions' ability to successfully perform their educational burdens are inseparably linked to the commitment and the competence of Saudi faculty members (Alnassar & Lee Dow, 2013; Smith & Abouammoh, 2013). Nevertheless, a number of SA higher education studies found that the ministry regulations emphasize substantial value on research in favor of teaching (Al-Ghamdi & Tight, 2013; Qureshi, 2006). Therefore, faculty at SA institutions may place more attention on research than they devote to teaching responsibilities or services (Qureshi, 2006; Smith & Abouammoh, 2013). This emphasis on research may be related to some of the concerns expressed regarding student's experiencing academic difficulties. Studies about Saudi students' achievement found a number of leading reasons of students' failure or college dropouts that are

linked to faculty's teaching capabilities such as: academically unqualified faculty, the lack of technical resources, lack of faculty student relationship, and ineffective pedagogical methods of teaching (Al Casey, 2012; Alhabsi, 2000; Al-Jahani, 2012; Alrshod, 2001; El Masry & Alshaya, 2009; Joud & Zayed, 2012; Mansi, 2004).

This study's importance is elevated by the substantial increase in the student population at Saudi higher education institutions in the last three decades (Ministry of Higher Education, 2017) and the unparalleled increase in the number of faculty members to students with the SA system (Al-Jahani, 2012; Alrshod, 2001; El Masry & Alshaya, 2009; Joud & Zayed, 2012). This study is connected to an initiative that has emerged from the Saudi higher education, namely the 25-year strategic plan (AAFAQ), and the desire to improve faculty members teaching styles and assessment approaches as well as teaching efficacy in Saudi universities (Ministry of Higher Education, 2006). The underlying purpose of (AAFAQ) strategic plan and its faculty evaluation process is improving the quality of faculty teaching performance and, in turn, student education, with the added purpose of ensuring institutional accountability (Al-Musallam 2007).

This study drew from the literature the notion of teaching efficacy, which is a new concept in the context of Saudi Arabia as there are very few studies that focus attention on this concept in the context of higher education. Equally important, this study examined the most critical factors that influence faculty teaching efficacy beliefs by measuring a number of faculty characteristics, and university teaching support elements. Remarkably, most of the studies in the conception of teaching efficacy are dedicated to k12 school teachers (Kinsey, 2006; Lin, & Lu, 2010; Tschannen-Moran & Hoy, 2007), and very few studies have investigated the influences of teaching efficacy in the population of college-level instructors (Chang, Lin & Song, 2011). Therefore, this study may shed light on the concept of faculty teaching efficacy in the area of

higher education in Saudi Arabia. Specifically, it investigated the relationship between perceived teaching support and teaching efficacy among the university faculty, which might help on the development of faculty teaching skills and meet the ideal goals of teaching support (Perepiczka, Chandler & Becerra, 2011).

By studying some aspects of faculty teaching efficacy and its relation to university support and other faculty characteristics, this study tries to determine the factors and variables that are related to faculty teaching performance with an intention to assist leaders and administrators build sufficient faculty teaching development programs. This study might help growing future strategies in faculty development training programs lead by Center for Teaching and Learning Development at King Abdulaziz University to improve faculty teaching skill and competence. My intention is that these development programs and trainings might take into account the variables that this study highlights to help faculty members enhance their teaching efficacy.

## **Chapter 2**

### **Review of Literature**

Theoretical frameworks or reviews of literature are used to logically condense information during the investigative process of research. They serve as conceptual lenses researchers use to make connections between previous studies and new data (Creswell, 2014) and these connections may lead to new findings. As a conceptual frame for this paper, relevant studies have been focused on providing an overview of what researchers found in the literature about faculty efficacy and specifically teaching efficacy beliefs and their impact on student achievements. Equally important, this part of the paper shed light on how teaching support including peer support, administrator support, and teaching resources are associated with faculty teaching efficacy. Furthermore, a number of faculty demographic variables that impact faculty teaching efficacy deliberated in-depth, with connections made to the present study.

#### **Teaching in Higher Education**

Teaching in higher education has some aspects that make it different from teaching in the K-12 level. Teaching in general is “concerned with providing students with opportunities to learn through...an intentional activity and an interactive process involving teachers, students and tasks” (Brown, 1993, p. 211). Faculty members in higher education have more autonomy in teaching than do those in K-12, which allows them to choose their own approach that reflects their own perception of teaching behaviors and their conception of teaching (Norton, Richardson, Hartley, Newstead, & Mayes, 2005). Faculty choose certain teaching behaviors, which are constrained by the curriculum, college, or even by students themselves. Teaching in higher education encompasses many elements that make it unique. It is comprised of course design, teaching-based research activities, classroom management, faculty–student interaction in and out

of the classroom, provision of other learning opportunities, and assessment and feedback to students (Fives & Looney, 2009; Morris & Usher, 2011).

Teaching in Saudi Arabia higher education also has its unique approaches that make it different from teaching in the K-12 level. One important aspect is that faculty have significantly more autonomy in teaching than teachers at the K-12 level, which allows them to choose the best and varied approaches that are more suitable to the subjects and field of study (Smith & Abouammoh, 2013). With the claim that students come from K-12 insufficiently prepared in content, this places a heavier teaching load onto the shoulders of higher education faculty in diversifying their teaching approaches and techniques in order to redeem inadequate preparation (Alnassar & Dow, 2013). In order to fulfill this goal, faculty in Saudi higher education are required to apply “explicit teaching of basic knowledge, explicit teaching of how to learn and the teaching of study techniques and skills... they also required a huge effort to develop English language skills where English is the medium of instruction” (Alnassar & Lee, 2013, p.51). Several approaches of teaching have been implemented in Saudi higher education content such as small group teaching methods, active learning techniques, and collaborative learning (Smith & Abouammoh, 2013). Other recommended pedagogical approaches include: learner-centered approaches, project-based learning, flipped classrooms, problem-based approaches, and critical thinking teaching philosophy.

### **Self-Efficacy and Teaching Efficacy**

Researchers regularly distinguish between self-efficacy as a term that is derived mainly from the work of Bandura (1977, 1986) while teaching efficacy was formulated from the latest Bandura framework (1997) and others such as (Tschannen-Moran & Hoy, 2007; Ashton & Webb, 1986; Klassen & Chiu, 2010; Marcos, 2008; Tschannen-Moran & Hoy, 2002).

Bandura introduced self-efficacy beliefs in his theory of Social-Cognitive Theory (or social learning theory) over a quarter of a century ago. It is considered to be one of the greatest achievements in the history of psychology (Butler, 1998; Locke, 1997). Bandura (1997) defined self-efficacy as the evaluation of one's abilities to achieve a desired level of performance in a given attempt. In addition, self-efficacy "is not a measure of skills one has but a belief about what one can do under different set of conditions with whatever skills one possesses" (p. 37). These forms of belief in one's abilities could be stimuli that impact one's willingness to act, the effort put into an attempt, and the persistence of managing instruments in the face of everyday obstacles (Bandura, 1997). It is also defined as people's judgments of their capabilities to perform and accomplish sequences of action which are required to attain design types of performances (Fives & Looney, 2009).

Teaching efficacy is known as the extent to which faculty believe that they can influence the level of student learning (Ashton & Webb, 1986; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977). Teacher efficacy is "the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (Tschannen-Moran & Hoy, 2007, p. 233). For the purpose of this paper, the researcher chose the definition of teaching efficacy as the faculty's perception of their aptitudes in course design, instructional strategy, usage of technology, management of the classroom, peer relationships, instructional context, and student learning outcomes assessment (Brown, 1993; Chang et al., 2010).

Higher education literature shows a fundamental connection between the notion of teaching efficacy and its impact on faculty teaching performance (Ashton & Webb, 1986; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Marcos, 2008; Tschannen-Moran & Hoy,

2007). Strong association has been reported between faculty teaching efficacy and their general beliefs in their capability to identify the need of students, especially those with learning difficulties, as well as in influencing students' achievement and behavior (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Klassen & Chiu, 2010; Marcos, 2008; Tschannen-Moran & Hoy, 2002). Faculty with high teaching efficacy foster adequate practices and instructional teaching performances that influences students' overall achievement, growth, and behavior (Bandura, 1997; Goddard, Hoy, & Woolfolk Hoy, 2000; Hoy, 2000; Klassen & Chiu, 2010; Tschannen-Moran & Barr, 2004). Faculty with a high sense of efficacy tend to have high expectations of themselves and their students' performances, higher goal aspirations, and a stronger commitment to their goals as a teacher (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Morris & Usher, 2011; Tschannen-Moran & Hoy, 2002). In fact, teacher efficacy has been strongly linked to several meaningful educational outcomes such as teachers' persistence, enthusiasm, commitment and instructional behavior (Marcos, 2008; Lin & Lu, 2010; Tschannen-Moran & Hoy, 2001).

**Efficacy framework.** Efficacy belief has conceptual framework roots in the reinforcement theories of Rotter (1966) and the social cognitive theory of Bandura (1977). The reinforcement theories of Rotter are grounded in the idea that the reactions of individuals to any motivations are influenced by their expectation that an anticipated outcome might occur as a result of specific behaviors (Fives & Looney, 2009; Morris & Usher, 2011). Rotter thought that the value assigned to an anticipated outcome specifies the reinforcement value of the outcome. He differentiated between beliefs about the internal and external control of reinforcements. On one hand, Rotter mentioned that the beliefs about internal control of reinforcement are ascribed to individual characteristics or activities such as his/her hard work or intelligence (Rotter, 1966).

While on the other hand, individuals who believe in external control ascribe to seeing their life controlled by external factors; such as luck, chance, powerful people or institutions, or even factors that they have no control over (Boone, Brabander & Witteloostuijn, 1999).

The social cognitive theory of Bandura is the leading theoretical framework for the concept of efficacy in this study. Social cognitive theory is an intellectual process in which individuals construct beliefs about their aptitude to perform at a given level of achievement (Bandura, 1986). Self-efficacy is defined as “beliefs in one’s capability to organize and execute the causes of action required to manage prospective actions” (Bandura, 1997, p. 2). Efficacy is also a central influence on individual achievement in a variety of scenarios, including: education, health, sports, and business (Bandura, 1986). Bandura’s (1977) social cognitive theory assumes that individuals are qualified with human agency and the beliefs that individuals develop and hold, which they anticipate to be true about themselves, shape the basis of human agency. These beliefs are an essential force for individual success or failure in all endeavors, including academic practices (Bandura, 1997). Human agency behaviors are a result of the fact that individuals are proactive, self-organizing, and self-regulating; as a result, their behaviors are not just a reflection of what they encounter; instead they are shaped by many internal or external incidents (Bandura, 1986). Individuals hold beliefs that allow them to practice an amount of control over their feelings and thoughts, so a theory that disregards these thoughts, which can adjust to any actions, is not a suitable theory that easily able to the explain the complex human behaviors (Bandura, 1986).

Although people’s psychological development practices, such as proactivity, self-organization, and self-regulation, are fundamental in shaping their beliefs, none of these play as central a role in shaping human behaviors as people’s perceived efficacy, which is the best

predictor of human behaviors (Morris & Usher, 2011). People build beliefs about their abilities in order to apply them at specific levels of competency, to decide the amount of energy to devote to specific activities, and to assess their persistence in the face of struggles that resulted in failures. These are in addition to managing the amount of stress and anxiety encountered when dealing with unwanted situations (Bandura, 1997).

However, less is known about the sources of teachers' efficacy beliefs. Bandura's (1997) social cognitive theory provides a general direction of possible resources of faculty teaching efficacy which guides literature for this study. Teaching efficacy beliefs assist faculty to functionally possess knowledge and skills, which are powerful resources for individuals' academic achievement (Bandura, 1997). One of the main factors in this study is faculty teaching experience, and Bandura (1997) expressed that efficacy beliefs are essential for both novice and senior faculty for many reasons. They empower instructors, either novice or senior, with the capability to support their estimation of actual abilities, enthusiasm, authority, ability to maneuver educational obstacles, and develop and utilize the skills and experiences they own (Bandura, 1997). On the contrary, social cognitive theory demonstrates that faculty, whether novice or senior, who do not perceive their ability as contributing to success with students are expected to devote less effort in class preparation and lecture delivery. These faculty may be defeated by the first obstacle they encounter despite the resources available to them (Bandura, 1997).

**General benefit of efficacy.** Countless pedagogical research supports the statement that efficacy belief is one of the influential factors in an individual's accomplishment in diverse setting activities involving education, health, sports, and business (Bandura, 1997). Evidence indicates a strong association between teaching efficacy and faculty outcomes, including

faculty's ability to fulfill the need of students with learning disadvantages or to influence students' overall achievement and behavior (Hoy, 2000; Klassen & Chiu, 2010). Efficacy belief is demonstrated to have a vital influence on individuals' aspirations and strength of commitment to an idea or task. It also impacts individuals' value of analytical and strategic thought, flexibility to adversity, level of enthusiasm, and persistence to face life or academic challenges and setbacks, and how susceptible they may be to job stress and related depression (Bandura et al., 2001; Chang et al., 2011).

High levels of efficacy may help faculty members in any higher education system to accomplish the requirements of educational and job-related responsibilities, including student achievement. These achievements may be conveyed in wider career options, increased interest in current jobs, greater educational preparation for different occupational careers, and a higher aspiration to face career challenges (Bandura et al., 2001). Faculty with high efficacy tend to have high expectations for themselves and their students' performance, high goal aspirations, and stronger commitment to their goals (Bandura et al., 2001; Morris & Usher, 2011). Those attributions are the core building aspect for faculty teaching efficacy which is the focus of this study. Conversely, studies show that low levels of efficacy expressed by faculty contribute to low student efficacy, low student learning outcomes, exposure to abnormal difficulties in teaching, and high levels of career-related stress and anxiety (Palmer, 2006; Tschannen-Moran & Hoy, 2007).

### **Faculty Teaching Efficacy Dimensions**

As has been explained earlier that faculty teaching efficacy consists of six dimensions (Chang et al., 2010). Many faculty teaching tasks collectively compound to build the concept of teaching efficacy and these six dimensions are among these teaching responsibilities faculty that

faculty have been asked to perform as a teacher (Bandura, 1997). In fact, higher education teachers are expected to use different instructional strategies to meet individual students' needs (Gow & Kember, 1993). Additionally, these six sets of faculty teaching tasks are part of Bandura's recommendations and Gow and Kember (1993) conceptions of teaching in order to diversify the teaching techniques which in turn alter sources of faculty efficacy and impact student achievement. This study utilized the six dimensions from the work of (Chang et al., 2010) as a lens to identify the perception of faculty teaching efficacy.

### **Characteristics of Faculty Members and its Influence on their Teaching Efficacy**

Faculty characteristics play an important role in faculty's teaching efficacy. These characteristics incorporate years of teaching experience, faculty-related professions (STEM/Non-STEM), and faculty rank. It is necessary to investigate and examine the association between these characteristics and faculty teaching efficacy.

**Teaching experience.** Research is inconsistent regarding the impact of teaching experience or the number of years faculty spend teaching in higher education institutions, on teacher efficacy. The first impact on teaching experience is in the concept of teaching itself. Studies have found that faculty's concept of teaching changes throughout the year. It morphs from being more teacher and curriculum-centered to a more student-centered and learning-orientated approach, which helps improve student learning outcomes (Norton et al., 2005). Regarding the effect of teaching experiences on teachers' efficacy, some researchers have stated that they did not find a significant relationship, or they found faculty efficacy beliefs remained relatively stable (Bandura, 1997; Fives & Looney, 2009). In a study of 1,024 faculty participants that examined the influence of teaching experience on teachers' efficacy, results showed only

modest levels of influence of teaching experience on teacher efficacy (Wolters & Daugherty, 2007).

Even though some indicators showed a lack of impact of faculty teaching experience on faculty teaching efficacy, others proved the opposite, and showed a great amount of influence on teacher self-efficacy. In two studies of faculty efficacy beliefs, the authors indicated that faculty with five or more years of teaching experiences have higher scores on a faculty efficacy scale, while faculty with less teaching experience showed lower scores (Chang et al., 2011; Chang et al., 2010). Due to the fact that these result highlights the importance of faculty experience on faculty efficacy, the study implemented the variable of time of teaching to find out how it is related in the sample of SA faculty members at a KAU.

**Professional rank.** Faculty rank, academic hierarchal rank, or professorship reflect a faculty member's level of promotion. The level of promotion is similar to other factors that may influence efficacy in that there is no consistency among researchers regarding its impact. Some researchers stated that there is no significant correlation between faculty members' efficacy beliefs and their academic rank (Fives & Looney, 2009). Others found that there is some level of impact from faculty professional rank on faculty self-efficacy beliefs. Tschannen-Moran and Hoy's (2007) study examined the connection between faculty academic rank and teaching experience, and they found that there was a significant association between professional rank and faculty efficacy beliefs. Similarly, in a study of 337 faculty members from ten leading universities in Australia, researchers demonstrated that professional rank and experience were related to faculty members' level of teaching efficacy beliefs (Schoen & Winocur, 1988). Due to these profounding findings of these prior reaserch, this current study examined the relationship of faculty rank as an independent variable to faculty teaching efficacy.

**Faculty major (STEM/Non-STEM).** STEM is an abbreviation for four academic fields, science, technology, engineering, and math. This paper chose to find the differences in teaching efficacy between faculty in these majors versus faculty in other majors due to two reasons: first, literature shows these differences. And second, there is a stereotype that STEM faculty are less effective at developing teaching skills. Therefore, the researcher investigated these two statements. Prior research highlights why this is an important variable.

In a study of 513 faculty members from different departments in Taiwanese universities, researchers found that faculty from the School of Education scored high in all dimensions of the efficacy instrument, while faculty in STEM fields scored lower, and these differences were statistically significant (Chang et al., 2011). Additionally, a study in the Saudi higher education context at King Khalid University showed that there is a statistically significant difference between STEM and Non-STEM faculty members in their teaching efficacy beliefs (Ahmed, 2016). However, another research study expressed that these differences are normal because faculty beliefs about teaching alter across disciplines and majors (Bandura et.al., 2001; Norton et al., 2005). In addition, faculty from diverse departments apply different teaching methods, which are reflected in their field of study, and as a result these individuals adopt different concepts of teaching norms (Norton et al., 2005). These two studies show the inconsistency between the literature regarding the effect of faculty field of study on teaching efficacy. Accordingly, this present study incorporated faculty academic fields as a variable to assess its correlation to their teaching efficacy in this sample of SA faculty members at both KAU.

**Gender.** Faculty gender is one of the independent variables this study tries to examine its relationship to the faculty teaching efficacy. Gender in the context of SA higher education means only male and female. Many studies examined the relationship between faculty teaching efficacy

and their gender type and they found significant differences in teacher-efficacy with respect to faculty gender (Chang et al., 2011; Fives and Looney, 2009; Landino & Owen, 1988; Norton et al., 2005; Schoen & Winocur, 1988). These studies showed female faculty score significantly higher than their male counterparts in many teaching efficacy dimensions. However, this is not the case in all studies related to gender differences in teaching efficacy beliefs.

The only study of faculty teaching efficacy the researcher found that related to faculty gender at the Middle East area is a study of all faculty members at four state universities in Sistan and Baluchestan Province in Iran. This study results indicated that faculty efficacy belief is related to gender differences, and male faculty have higher efficacy beliefs than female faculty (Mehdinezhad, 2012). However, other researchers seem to contradict this view in that the results of their studies showed no significant differences between female and male faculty teaching efficacy (Tschannen-Moran & Gareis, 2007; Tschannen-Moran & Gareis, 2004; Shavaran, Rajaepour, Kazemi & Zamani, 2012). On the other hand, some studies found that faculty gender is correlated only with several dimensions of faculty teaching efficacy. Chang et al. (2011) in their study of faculty efficacy demonstrated that female faculty exhibit more confident than male faculty in two areas of teaching efficacy of class management and learning assessment. In like manner, other study in Iran found that males faculty indicate higher efficacy in interpersonal relation with their students while females' faculty scored higher in technology usage (Mehdinezhad, 2012). Consequently, this study examined the relationship between gender and faculty teaching efficacy in the context of SA higher education.

### **The Influence of University Teaching Support Factors in Faculty Teaching Efficacy**

Faculty teaching efficacy may be impacted by many variables, among them university teaching support (i.e., administrators support, peers support, teaching resources support, and

pedagogical). Providing adequate support for faculty members appears to be a crucial initiative that helps to strengthen higher education instructors' overall efficacy (Bandura, 1997; Perepiczka, Chandler & Becerra, 2011) and to improve faculty teaching outcomes (Chang, McKeachie & Lin, 2009; Kinsey, 2006; Tschannen-Moran and Woolfolk Hoy 2002). Faculty teaching support in the form of administrative and peer support (personal, emotional, or professional support) tend to improve the level of faculty teaching efficacy and, in turn, results in more effective teaching, productivity, commitment and improving student learning outcomes (Brouwers, Evers & Tomic, 1999; Chang et al., 2010; McLaurin, Smith & Smillie, 2009; Rosenholtz, 1989; Scott, 2012). Equally important, technical support (technological resources) seems to be crucial in increasing faculty teaching efficacy (Alshammari, Ali & Rosli, 2016; Lin & Lu, 2010; Tschannen-Moran and Woolfolk Hoy 2002).

Providing support for faculty members and, specifically, teaching support, appears to be crucial in strengthening higher education instructors' overall teaching outcomes (Chang et al., 2010). Some research suggests that there is a weak relationship between teaching support and faculty efficacy beliefs or that the correlations are positive but weak. However, evidence indicates that faculty teaching resources influence faculty efficacy (Tschannen-Moran, Hoy, & Hoy, 1998). Still, teaching support helps administrators in faculty development departments as well as university leaders to improve faculty levels of teaching efficacy and, in turn, results in more effective teaching and student learning outcomes (Chang et al., 2010). Given this importance of teaching support for faculty members' efficacy. The present study focuses on faculty members at KAU in SA to determine their perceptions of teaching support in four dimensions (administrators support, peers support, teaching resources, and teaching training programs) and their perception of teaching efficacy.

**Teaching resources.** Teaching resources are defined as tools by which faculty members are able to use various types of teaching approaches to facilitate student interactions and improve academic levels. Research shows that teaching resources made noticeable contributions in explaining the variance in faculty teaching efficacy beliefs; the variance is stronger for new faculty (Tschannen-Moran & Hoy, 2007). In a study of 513 faculty in various Taiwanese universities, faculty members' efficacy beliefs were found to be influenced by teaching resources that the university provided, and these impacts were statistically significant (Chang et al., 2010). Tschannen-Moran & Woolfolk Hoy, in their 2002 study, stated that teachers efficacy was strongly associated with teaching resources. At KAU as a site of this study, faculty receive some teaching supports, including teaching training to improve student learning, leadership skills training, and provide information environment and research databases that support scientific research and electronic publication (King Abdulaziz University, 2018). KAU has the Center for Teaching & Learning Development that is designed to equip faculty with teaching and research skills, resources that focus on increasing productivity and personal organization as well as technology tools and support (King Abdulaziz University, 2018). This study is designed to determine the influence of these resources on faculty members' teaching efficacy at KAU.

**Administrative support.** Administrators in any academic institution influence their employees' enthusiasm and productivity by the way they communicate with them and the means by which they operate the organization (Hekman, Steensma, Bigley & Hereford, 2009). Support from administrators has a substantial correlation with faculty sense of efficacy belief (Bandura, 1997; Chang et al., 2010). In a study by Tschannen-Moran and Woolfolk Hoy (2002) found that administrator support by itself did not affect faculty efficacy, but with a combination of variables it did influence faculty efficacy. Although this may be true, insufficient support from

administrators has negatively affected faculty efficacy beliefs and that absence of faculty recognition moderates faculty self-efficacy beliefs (Tschannen-Moran & Hoy, 2007). Accordingly, this study investigated perceptions of administrators support variable to assess their relationship to faculty teaching efficacy in the sample of SA faculty members at KAU

**Peer support.** Perhaps one of the most crucial factors that support faculty members' improved teaching efficacy is peer support. Peer support is the most cited factor and strongest dimension, playing a main role in shaping teaching quality and enhancing instructor efficacy beliefs (Chang et al., 2010). Receiving positive feedback from colleagues related to improving teaching performance, addressing student needs, and the partnership with peers was found to be the leading factor influencing faculty efficacy (Brownell et al., 2005; Tschannen-Moran & Hoy, 2007). Two studies stated that there was a significant correlation between peer support and teaching efficacy, despite this relationship being weak in some cases (Chang et al., 2010; Tschannen-Moran & Woolfolk Hoy, 2002). As has been noted, this paper explored the extent to which perceptions of peer support is predictive of improved teaching efficacy among faculty at a university in SA.

**Educational training.** Improving instructors teaching quality has been one of the leading issues in a number of proposed policies at the federal and state level, as well as a call from leaders in universities and K-12 education (Lancaster, Stein, MacLean, Van Amburgh, & Persky, 2014; Wenglinsky, 2000). Demands for educational training are a result of concerns by policy makers and university leaders about the lack of instructors' teaching skills training in both higher education and K-12, which may reflect in student achievement (Chang et al., 2011; Wenglinsky, 2000). Many researchers confirmed that the majority of K-12 districts and schools provide multiple training programs for their teachers to learn and perform new teaching skills, unlike

institutions of higher education that tend to minimize the importance of teaching training (Chang et al., 2011; Morris & Usher, 2011). However, faculty in higher education across disciplines and departments have pinpointed the essential role of teaching training and collaboration between faculty in improving faculty teaching skills. These statements support the findings of some studies that teaching development programs are needed in order to improve higher education faculty teaching qualities (Brownell, Ross, Colón, & McCallum, 2005; Lancaster et al., 2014).

In the last two decades countries around the world have invested millions of dollars and thousands of hours of faculty time on teacher development programs with diverse designs and rationale (Chang et al., 2010). Saudi Arabia (SA) has also experienced this investment of time and money. Faculty development teaching programs are becoming increasingly common in every university to enhance faculty performance, to keep faculty up-to-date on various educational areas, and to support their attainment of new teaching skills, which are reflected in their increasing efficacy beliefs and changing teaching attitude (Alrweithy & Alsaleem, 2014).

This pedagogical training has resulted in numerous benefits for teaching and faculty members (Coffey & Gibbs, 2000, 2002; Hoy, 2000; Lancaster et al., 2014; Norton, Richardson, Hartley, Newstead & Mayes, 2005; Wenglinsky, 2000). These programs have led to an enhancement of faculty approaches to teaching, improvement in educational research, renewed faculty motivation and enthusiasm, and an increase in the publication of educational scholarship (Coffey & Gibbs, 2002; Lancaster et al., 2014). Studies also show that these training programs help faculty members shape their conceptions of instructional strategy, student engagement, and the improvement of students' overall achievement (Norton et al., 2005; Wenglinsky, 2000). Through a study of teacher training in 20 higher education institutions, data led to the conclusion that faculty who participated in these programs obtained high student evaluation ratings, and

faculty noticeably changed their teaching approach to mirror the student-centered approach (Coffey & Gibbs, 2000). In another longitudinal study of 242 faculty members, researchers had half of the faculty participants attend different training programs and the other half did not engage in any training program. Faculty who participated in these programs rated themselves higher than others when assessed for specific teaching skills, self-efficacy, and their behaviors were found to be significantly different than faculty who did not participate in training programs (Knight et al., 2005).

A lack of effective teaching preparation programs results in low student learning outcomes, high faculty turnover, and low student graduation rates (Lancaster et al., 2014). Although many researchers confirm the importance of these programs and the disadvantages of the lack of these programs, there are many obstacles ahead of the developers and leaders of these programs. It is common that these programs, specifically in public universities, face difficulties in getting faculty to attend. Fewer than 50% of public university faculty attend teaching training programs (Chang et al., 2011). In the case of this study, (KAU) provided, to some extent, development training for faculty members in three domains: teaching, research, and leadership skills. A study at a Saud University at SA showed significant differences in teaching performances, from the perspective of students, between faculty who had received one training session compared to those who had received more than one session (Al-Sudairy, Ismaail, Al ash-Sheikh & Metwaly, 2011).

## **Summary**

As shown, teaching efficacy is considered an influential variable that impacts faculty teaching skills and capability. Faculty efficacy beliefs increase attempts to invest in teaching and plan competent teaching techniques, as well as increase levels of ambition, enthusiasm, and

general belief about the power of teaching to fulfill the needs of students. Similarly, faculty teaching efficacy helps reduce criticism of students' low performance (Bandura et al., 2001; Chang et al., 2010). Research shows that teacher efficacy also impacts student motivation, behavior in the classroom, and study performance as well as overall student achievement outcomes (Goddard et al., 2004). Due to the advantages of faculty efficacy in student outcomes, this study explores the concept of faculty teaching efficacy and its correlation to the four university teaching support dimensions and other important faculty characteristics in the context of Saudi higher education. This is done with the intention to assist university administrators and leaders to build sufficient faculty teaching development programs that support faculty to improve their teaching efficacy.

## **Chapter 3**

### **Methodology**

#### **Introduction**

This chapter provides a description of procedures followed to conduct this study about SA faculty teaching efficacy and its correlation with several aspects of university teaching support and some selected faculty demographic variables. With this in mind, this section of the study provides a detailed description of a teaching efficacy survey (Faculty Teaching Efficacy - FTE) and a teaching support survey (Faculty Perceived Teaching Support - FPTS) that was administered to collect the data. Also, this section includes a description of the population and the sampling procedures, the methods and statistical analyses, the procedures of collecting and analyzing the survey data, and the limitations.

The purpose of this study is to answer the following two main research questions:

- 1) To what extent do various faculty characteristics (professional rank, years of teaching experience, STEM/non-STEM, gender, international vs. SA faculty member, highest degree, and place of obtaining the highest degree) predict a composite measure of faculty teaching efficacy (course design, instructional strategy, technology usage, class management, interpersonal relation, and learning assessment)?
- 2) To what extent does faculty perception of teaching support (administrator support, peer support, teaching resources support, and teaching training programs) predict a composite measure of faculty teaching efficacy (course design, instructional strategy, technology usage, class management, interpersonal relation, learning assessment, and teaching training programs) after controlling for faculty characteristics?

Data were collected from King Abdulaziz University (KAU), which is a large comprehensive university in the west of the SA. KAU was purposefully chosen from a pool of 38 SA universities because the researcher has a convenient access to universities' faculty members due to the fact that the researcher works at KAU and due to pre-established collegial relationships with key institutional administrators and faculty members. Another reason why this context is chosen is because there have not been enough studies surveying the perception of faculty teaching efficacy at any SA higher education institution and specifically at KAU. Studying the concept of teaching efficacy at KAU might help generalize this study's results among other SA public higher education institutions by reason of the shared teaching culture, mission, and policies. Finally, the number of faculty members at KAU exceeds 8,000 and that is deemed enough to sample from.

### **Data Sources and Sample**

The targeted populations are all faculty members at KAU. As mentioned earlier the researcher performed this study at KAU due to the accessible population (convenience sampling) that eases the recruitment of the subjects (Coladarci & Cobb, 2013). This is related to the notion that the only way to collect data and reach out faculty members at any Saudi higher education institution including KAU is by sending a request to the Deanship of Scientific Research units at the university in order to contact the entire population of faculty members. This study capitalizes on the convenience sampling procedure and managed to survey the whole population. The researcher did not have a direct link to the study population in order to randomly select the study sample, which results in unfeasibility of utilizing other sampling procedures (e.g., random sampling).

The study data collected utilizing the online survey tool *Qualtrics*. Online surveys are low in cost, easy to deliver, and data are stored electronically as well as it is easy to increase the size of the responses, and to improve response quality (Smyth, Dillman, Christian, & McBride, 2009). This survey was sent to approximately 8,000 male and female faculty members, Saudi and non-Saudi (Professor, Associate Professor, Assistant Professor, Lecturer, Teaching Assistant, and teacher) at KAU. However, responses from teachers have been excluded.

The researcher sent a request to the Deanship of Scientific Research units at KAU to send out an email to all faculty members at the four university campuses. Also, the researcher's academic department helped by sending the survey to the university faculty throughout the Scientific Research Unit at the School of Education. This email consisted of the purpose of the study with instructions for completing the online survey as well as link to the survey itself in both Arabic and English language. The reason behind sending the survey in both languages was due to the fact that there are many faculty in English departments and some STEM schools who do not speak Arabic and even some Saudi faculty who prefer the English version of the surveys. The email also clarified that participation is completely voluntary and provided an anticipated time of 10 minutes for survey completion and contact information in case of questions. Data collection took approximately three months to finish. Institutional Review Board (IRB) approval was obtained for this study from the KU Human Subjects Committee prior to send the survey.

### **Instrumentation**

There are numerous ways of data collection, among them is the use of a valid and reliable instrument to collect data, which this study utilized (Creswell, 2014). This section provides information about the instruments and their validity and reliability measured scores as reported by Chang et al. (2010).

**Faculty Perceived Teaching Support (FPTS) Questionnaire.** This questionnaire was originally designed by Tschannen-Moran and Hoy (2002) to measure faculty's perceived teaching support. Tschannen-Moran and Hoy (2002) designed this instrument to evaluate the support teachers received in five areas (teaching resources, interpersonal support provided by the administration of their school, interpersonal support provided by colleagues, parental support and involvement in their classrooms, and community support provided for their classrooms). Chang, McKeachie and Lin (2010) used an adjusted version of the Tschannen-Moran and Hoy (2002) questionnaire and identified only three areas that fit higher education teaching, which are teaching resources (TR), interpersonal support by administration (administrative support AS), and interpersonal support from colleagues (peer support PS). Then they had a Taiwanese panel of experts in the field of university teaching to edit, reword and revise their adjusted questionnaire to be suitable for use in higher educational level. The reviewers ended with a modified FPTS questionnaire that consisted of 14 phrased items based on the general teaching support in higher education level. With supervision from the researcher advisor and dissertation committee, the researcher made a substantial revision for some of this scale items (substituted synonym words for clarity in the context of SA), added one item as well as added a one whole subscale (Teaching Training Program TTP) that has five items. The final version of this scale included 20 item phrases measure faculty perception in four areas of teaching support: Teaching Resources (TR), Administrative Support (AS), Peer Support (PS), and Teaching Training Program (TTP). Some of the survey questions are as follows:

- The university provides the technology and software resources for teaching.
- The university provides the facilities and resources help you improve student learning
- The university provides the tutoring or coaching resources for student learning.

- The administrators have a comprehensive mechanism that rewards quality teaching.
- The administrators are concerned whether the teaching load is manageable
- The colleagues provide of consulting service for teaching
- The colleagues help me when I had hard time in teaching.
- The colleagues share teaching experiences with me.

Chang et al. (2010) reported high reliability coefficients among the original 14 items of the revised Faculty Perceived Teaching Support Scale. Reliability of the scale of Faculty Perceived Teaching Support (FPTS) reported using Cronbach's Alpha statistic, which is a measurement of the dependability or reproducibility of the scores. This statistic is used to measure internal consistency of the instrument that higher coefficients represents higher reliability (Coaley, 2014). Analysis of internal reliability in Change et al. (2010) study revealed Cronbach's alpha coefficients of .89 for the teaching resources dimension, .86 for the administrative support dimension, .86 for peer support dimension, and .92 for the total 14 items of the revised measure. However, for this study, Cronbach's Alpha was run to test the internal reliability for the revised scale including the 20 items and the four subscales as it appear in Table 1 as follow: teaching resources ( $\alpha=.93$ ), administrators support ( $\alpha=.84$ ), peers support ( $\alpha=.89$ ), and teaching training programs ( $\alpha=.92$ ), which are relatively higher than average. The overall value of Cronbach's Alpha is considerably high ( $\alpha=.93$ ). More tabular information about the scale is shown in **Appendix A**.

Table 1

*FPTS & FPTE Scales Reliability*

		Cronbach's Alpha	N of Items
<b>FPTS Scale</b>	Teaching Resources (TR)	.93	5
	Administrators Support (AS)	.84	5
	Peers Support (PS)	.89	5
	Teaching Training Programs (TTP)	.92	5
	Overall Scale Reliability	.93	20
<b>FPTE Scale</b>	Course Design (CD)	.90	6
	Instructional Strategy (IS)	.89	5
	Technology Usage (TU)	.90	4
	Classroom Management (CM)	.94	6
	Interpersonal Relation (IR)	.87	3
	Learning Assessment (LA)	.87	5
	Overall Scale Reliability	.96	29

**Faculty Teaching Efficacy (FTE) Questionnaire.** This questionnaire was designed by Chang, Lin and Song (2011) to measure faculty teaching efficacy. Chang, Lin and Song, (2011) stated that the FTE instrument is composed of six dimensions derived from the literature and consists of 28 items extracted from several interviews. These 28 items were distributed among six dimensions (course design, instructional strategy, technology usage, class management, interpersonal relation, and learning assessment) to examine faculty teaching efficacy. Chang et al. (2011) refined the FTE items, edited and reworded the chosen elements to be relevant in the context of higher education. Additionally, the researcher with supervision from his advisor and dissertation committee, made a few alterations to some of this scale items (substituted words with synonym to be more explicit in the context of SA), and added one more item to the scales to be in total 29 items.

Chang et al. (2011) reported high reliability coefficients among these original chosen 28 items of the faculty teaching efficacy scale. Analysis of internal reliability of this measurement revealed Cronbach's alpha coefficients of .91 for the course design category, .88 for the instructional strategy category, .93 for technology usage category, .90 for class management category, .86 for interpersonal relation category, and .87 for learning assessment category. The coefficient of internal reliability for the total 28 items of the scale was 0.95. However, for the modified scales of (FPTE) with the 29 items and six subscales the Cronbach's Alpha is as follow: course design ( $\alpha=.90$ ), instructional strategy ( $\alpha=.89$ ), technology usage ( $\alpha=.90$ ), classroom management ( $\alpha=.94$ ), interpersonal relation ( $\alpha=.87$ ), and learning assessment ( $\alpha=.87$ ). The overall (FPTE) scale reliability at Table 1 is reported by evaluating Cronbach's Alpha, which is significantly high ( $\alpha=.96$ ). More tabular information about the scale questions is shown in **Appendix B**. Some of the survey questions are as follows:

- Establish comprehensive teaching objectives
- Arrange appropriate timeline for the curricular progress
- Teach according to students' various levels of readiness
- Modify my teaching activities during class sessions in order to sustain students' attention
- Select appropriate teaching media to enhance my teaching.
- Know how to produce relevant teaching media.
- Promote a democratic environment in class.
- Maintain a good relationship with my students.
- Provide assistance to students whenever they encounter difficulties in learning.
- Utilize a variety of assessment methods to evaluate students' learning results.
- Improve my teaching according to assessment results.

These two scales consist of 49 six-point Likert-type items. Likert-type scale questions are closed-ended and on a continuous scale and they are easy to complete and commonly used in attitude surveys (Smyth et al., 2009). These six-point Likert-type scales coded as strongly agree (6), agree (5), somewhat agree (4), somewhat disagree (3), disagree (2), and strongly disagree (1). Additionally, some selected demographic information collected which have been explained in the following paragraphs.

**Characteristics.** The last section of the questionnaire included several demographic check box questions to collect data regarding faculty's professional ranks, years of teaching experience, STEM/non-STEM, pedagogical training, gender, international vs. SA faculty member, highest degree, and place of obtaining the most recent degree. In order to account simultaneously for continuous and nominal data types, I recoded several of the variables into binary values. Professional rank is an ordinal variable that have been coded as follow. STEM/non-STEM, international vs. SA faculty member, highest degree (Ph.D. or less) and gender (male-female) treated as dichotomous variables, while years of teaching experience is a continuous variable.

**Professional rank.** This variable includes: Professor, Associate Professor, Assistant Professor, Lecturer (faculty with master's degree), and Teaching Assistant (with bachelor's degree). These two last ranks (Lecturer & Teaching Assistant) are added to the study because SA higher education system hires instructors with bachelor and master's degree to teach undergraduate students and they are considered faculty members. Those five ranks dummy coded in four categories while the fifth category (Teaching Assistants) is considered as a references group. Faculty who were considered as Professor, Associate Professor, Assistant

Professor, Lecturer were each coded as 1 if the category applies to the faculty and 0 if not applicable. No Faculty member falls in more than one of these areas.

***Highest degree:*** The researcher divided the population in two categories faculty with a Ph.D. and those with less than Ph.D. Faculty with a Ph.D. degree coded 1 and those with less than Ph.D. coded 0.

***Years of teaching experience.*** This variable refers to the number of years that faculty members have been working as a faculty member at KAU. The researcher divided faculty members in two categories either novice whose teaching experience from 1-5 years, while senior whose teaching experience six years and more. Novice faculty coded as 0 and senior faculty as 1.

***STEM/Non-STEM.*** STEM in the U.S. higher education context includes only [Science, Technology, Engineering and Mathematics], but in Saudi Arabia it also includes medical majors as well. Non-STEM majors include the remaining majors. The researcher chooses to add these two variables because of the common stereotype that STEM faculty are less prepared for teaching than their peers in non-STEM schools. Therefore, the researcher tries to test this idea that might help university leaders investigate this more and build programs that fill this gap. Both of these dichotomous variables dummy coded that Non-STEM faculty coded as 1, and STEM is coded as 2.

### **Translation of the Instrument**

Since the majority of the participants in this study were Arabic-speaking faculty who teach in different departments, and due to language barriers, English language may not be the preferred mean of data collection because it might restrain faculty of accurately understand the questionnaire. Therefore, the researcher decided to translate the FTE and FPTS questionnaires into Arabic as well as translate the demographic questions.

To ensure validity of the translated questionnaire, the researcher obtained support from doctoral students at the University of Kansas who are experts in both languages (English/Arabic) and some of them even have a linguistics background to perform reverse translation. The reverse translation process began by translating the English version into Arabic language, and then the revised Arabic questionnaire was given to a different translator in order to translate it back into English. After that, the researcher compared the original English questionnaire with the version that has been translated from Arabic into English. Both versions have been matched and the any significant differences have been considered in the final revised version of the survey.

### **Data Analysis**

Collected data were analyzed by using Statistical Package for the Social Sciences (SPSS) software Version 24.00. The researcher ran the descriptive statistics to gain a better understanding of the data. Descriptive statistics include (the mean, standard deviation (SD), and the frequency distribution) reported in Chapter 4.

Before reporting the aforementioned demographic data, the researcher started with cleaning the data, and removed the missing and uncompleted responses. A number of demographic variables were recoded into binary values in order to report what is needed to be analyzed in the accurate format. Also, a number of variables were recorded by computing the average of the responses from the same subcategories into a single variable, dichotomizing or dummy-coding the rest of the characteristics variables to make them compatible for the regression analyses. A number of variables that need to be Dummy coded were incorporated in this following Tables 1 and 2.

### Categorical variables dummy coding

Table 2

Dummy Coding Rank

	Pro	Assoc	Assis	Lecturer
<b>Professor</b>	1	0	0	0
<b>Associate</b>	0	1	0	0
<b>Assistant</b>	0	0	1	0
<b>Lecturer</b>	0	0	0	1
<b>TA</b>	0	0	0	0

Table 3

Dummy Coding Country

	SA	USA	UK	Egypt
<b>Saudi Arabia</b>	0	0	0	0
<b>USA</b>	0	1	0	0
<b>UK</b>	0	0	1	0
<b>Egypt</b>	0	0	0	1

The study proceeds in reporting the relationship between each of the independent variables (faculty characteristics and the four dimensions of faculty teaching support scale) with the composite of the six dependent variables (dimensions of faculty teaching efficacy). The higher the correlation between the criterion and predictor variables the more proportion of variance expected to be explained (Cohen, Cohen, West & Aiken, 2003)

Multiple linear regression was the proper correlational statistic to utilize in studies that include two or more independent variables and one dependent variable (Cohen et al., 2003; Mertler & Vannatta, 2002). Therefore, two multiple regression analyses were conducted and reported in Chapter 4 to analyze the relationship of number of teaching support dimensions (teaching resources, administrative support, peer support, teaching training programs) and the

other faculty's characteristics of (professional rank, years of teaching experience, STEM/Non-STEM, gender, international vs. SA faculty member, highest degree, and place of obtaining the highest degree) to the composite of the teaching efficacy (course design, instructional strategy, technology usage, class management, interpersonal relation, and learning assessment). These analyses sought to determine which of these predictors steadily makes the largest contribution on the teaching efficacy. This was accomplished by computing the percentage of variance that can be predicted by all but one of the predictors, and then determining the additional variance (the change in multiple R<sup>2</sup>) that can be explained by the addition of the remaining variable. Significance was determined by using an alpha level of .05. Since some of the predictor variables are categorical, dummy coding applied. The results in chapter four provide insight into which predictor variables have stronger relationships and explain high percentage of variance in the criterion variables.

Regression analysis involves several assumptions including the normality which assumes that Y is distributed normally at each value of X (homoscedasticity) (Cohen, Cohen, West & Aiken, 2003). To examine the normality of variables the magnitude of the skewness and kurtosis have been assessed. Skewness is the assessment of the symmetry of the distribution, that "a skewed variable is a variable whose mean is not in the center of the distribution; while kurtosis has to do with the peakedness of a distribution; a distribution is either too peaked or too flat" (Tabachnick & Fidell, 2007, p.79). The significance of the values of both skewness and kurtosis are calculate by dividing the value of skewness and kurtosis by the Std. Error of both of them (Tabachnick & Fidell, 2007).

Table 4 presents the magnitude of the value of both skewness and kurtosis in assessing the normality of the four subscales (teaching resources, administrative support, peer support,

teaching training programs) and their composite of (FPTS). The table shows a small negative skewness value for the four predictor variables and for the DV, and these variables have a very small kurtosis value (the skewness and kurtosis values are near to zero), which basically shows a reasonably normally distributed variables value.

Furthermore, by evaluating the normality of the of DV teaching efficacy (FPTE), Table 4 shows that the scale is basically normally distributed with a small negative skewness and very small indication for kurtosis. Moreover, by evaluating the normality of the scale from the visual appearance of the diagram as Tabachnick & Fidell, (2007) recommended for such big sample, the histogram showed a reasonably normally distributed of the FPTE scale.

Table 4

*Normality evaluation for (FPTS & FPTE) scales*

	Teaching Resources	Administrative Support	Peer Support	Teaching Training Programs	FPTS	FPTE
Mean	4.1828	3.7640	4.3849	4.2190	4.1364	4.9684
Std. Deviation	1.10423	1.07953	1.05646	1.08331	.85526	.61749
Skewness	-.645	-.156	-.701	-.593	-.389	-.471
Std. Error of Skewness	.126	.126	.126	.129	.126	.132
Kurtosis	.006	-.242	.498	.082	.443	.101
Std. Error of Kurtosis	.252	.252	.252	.257	.252	.263

**Limitations**

The sample of this study was confined to faculty members from one public university namely KAU. Therefore, a more diverse sample from other SA universities would help increase the generalizability of the study results. Furthermore, data collected using a web-based survey and the access to this data limited only to the researcher. However, it was the responsibility of

the Deanship of Scientific Research units to forward the email to the qualifying participants. Also, since the survey is web-based, potential technical difficulties might have occurred for faculty members such as poor internet connections, or insufficient experience dealing with online surveys, which might have inhibited the faculty's ability to complete the survey. The data collection depended on a self-reported procedure and the efforts of faculty members. There is no documentation or evidence that would support or validate faculty experiences; therefore, the notion of "good faith" was applied. Moreover, participants were asked about their thoughts about their previous professional experiences. This might result in some errors, as participants might have experienced difficulties remembering their exact perceptions during those years.

## Chapter 4 Result

### Introduction

The purpose of the study was to determine the relationship between KAU faculty members' perceptions of university teaching support, demographics characteristics and the composite teaching efficacy. Perceptions of university teaching support included administrator support, peer support, teaching resource support, and teaching training programs. Faculty demographic backgrounds included faculty qualifications [rank], faculty experience [years of teaching], whether or not a faculty member is in a STEM or non-STEM fields, gender, citizenship [Saudi or non-Saudi], highest degree, and country of obtaining the highest degree [country]. The composite of faculty teaching efficacy included course design, instructional strategy, technology usage, class management, interpersonal relation, and learning assessment.

This chapter presents the results of the analyses. First, the chapter describes the sample of the study to investigate the characteristics of faculty members in KAU. The descriptive statistics include several demographic independent variables. Also, data reporting includes the responses for the two main factors of the study. The first factor is teaching support (this factor includes four sub-factors: administrator support, peer support, teaching resources support, and teaching training programs), which serves as key independent variable. The second factor, teaching efficacy, serves as the key dependent variable. This chapter reports the results of a series of multiple regression analyses on the factors that influenced faculty teaching efficacy. All statistical differences have been reported using an alpha level of  $p < .05$ . The findings are also summarized at the end of this chapter. The first part of this chapter presents the descriptive statistics for each variable followed by the second section where the research questions have

been answered through the demonstration of correlations, comparison of means, standard deviations, and linear regression analyses.

### **Description of Sample**

**Faculty characteristics.** Demographic information for the sample is reported for the following variables: professional rank, years of teaching experience, STEM/non-STEM, gender, international vs. SA faculty member, highest degree, and place of obtaining the highest degree. Number of statistical parameters report for both scales including means, standard deviations (SD), and Cronbach's alpha coefficients for each scale.

The study data were collected using the two surveys (FPTS & FPTE), which have been detailed in Chapter 3. Table 5 provides information regarding the characteristics of the sample of faculty members who were teaching at KAU during both the spring and fall semesters of 2018.

Approximately 600 faculty from KAU filled out the survey, but only 372 were complete responses, while 228 failed to complete at least 70% of the information requested in the surveys or did not complete the demographic information. Out of these 372, 56% are female faculty members and 44% are male faculty members as exhibited in Table 5. This greater proportion of females largely reflects the fact that female faculty overall exceed the number of male faculty at KAU, which is consistent with the national census by Ministry of Higher Education in the SA higher education system at whole (Ministry of Higher Education, 2018). Table 5 provides information about the highest degree held by faculty in the sample. The data shows that 64% of the faculty obtained Ph.D. degree and 36% were faculty with a master or bachelor's degrees.

Regarding faculty rank, the majority of faculty members who completed the survey were assistant professors, which accounts for 43% of the faculty population. This is consistent with the national percentage of the same rank in SA higher education system at whole. The second

highest rank percentage is accounted for by lecturers at 27%, then associate professors 12%, teaching assistants 10 %, and finally full professors at 9 % only. Assistant professor in the Saudi higher education system is the status that faculty earned directly after obtaining their Ph.D. degree. Notably, a predominance of faculty members at SA higher education institutions extended their stay at this position due to a number of obstacles from faculty perspective including, overwhelming teaching and advising workloads, complicity and ambiguity of the promotional procedures and standards, and the refusal for any promotional research related to thesis or dissertation topics (Alnaser, 2013; Ibn Baker, 2015).

Table 5 illustrates that more than half of faculty members (57%) in the study sample are in the non-STEM field, which ranges from Liberal Arts to the Law school. On the contrary, the other 43% of the faculty members were in the STEM field, and as mentioned previously STEM field in SA system include medical majors (Nursing, Pharmacy, Medical, Dentistry etc..) as well as Engineering, Sciences, Computing and IT, etc.

Table 5

*Demographics*

		Frequency	Percent
<b><i>Gender</i></b>	Male	163	43.8
	Female	209	56.2
	Total	372	100.0
<b><i>Highest Degree</i></b>	Ph.D.	237	63.7
	Less than Ph.D.	135	36.3
	Total	372	100.0
<b><i>Rank</i></b>	Full Professor	35	9.4
	Associate Professor	43	11.6
	Assistant Professor	159	42.7
	Lecturer	99	26.6
	Teaching Assistant	36	9.7
	Total	372	100.0
<b><i>Faculty Discipline</i></b>	Non-STEM	211	56.7
	STEM	161	43.3
	Total	372	100.0

Table 6 provides information regarding faculty teaching experience at KAU, which indicates how many years faculty have been teaching at KAU. The table shows that faculty teaching experience from 6-10 years is the highest frequent group with 32%, followed by those whose experience is between 1-5 years with 27% of the sample. Only 19% of the sample have teaching experience of more than 21 years. However, for the purpose of this study and the support from the literature (Michel, 2013; Özoglu & Beyazit, 2015; Peters, 2014), faculty teaching experiences have been divided into two categories (Novice and Senior faculty). Novice

are faculty whose experience in teaching are up to five years, while senior faculty are those whose teaching experience exceeds six years. As it shows in Table 6, out of the whole sample of this study (372 faculty), 73% were senior faculty, and 27% were novice faculty.

Table 6

<i>Faculty Teaching Experience</i>		Frequency	Percent
<b><i>Detailed Faculty Teaching Experience</i></b>	1 - 5 years	102	27.4
	6 - 10 years	117	31.5
	11 -15 years	35	9.4
	16 - 20 years	44	11.8
	21 years or more	74	19.9
Total		372	100.0
<b><i>Combined Faculty Teaching Experience</i></b>	Novice	102	27.4
	Senior	270	72.6
	Total	372	100.0

Table 7 shows that Saudi faculty members account for 88% of the study sample, while colleagues from other countries represents 12% of the sample. However, the national statistic demonstrated that the non-Saudi faculty accounted for more than 40% of the population of faculty members in the SA higher education institutions (Ministry of Higher Education, 2018). Faculty in the sample obtained their degrees from many western countries (UK, USA, Germany, and Canada) besides Russia, Australia, New Zealand, Japan, and several southeast Asian and middle eastern countries. However, the majority of the sample earned their highest degree from one of four countries (Saudi Arabia, USA, UK, and Egypt), and the rest of the sample from these other countries have been eliminated due to the fact that they accounted only for less than 1.5% of the sample. Table 7 indicated that 45% of the faculty members in the study sample obtained their highest degree from Saudi Arabia, 23% from USA, 25% from UK, and 7% from Egypt.

Table 7

<u>Citizenship &amp; Highest Degree Obtained Location</u>			
		Frequency	Percent
<b><i>Citizenship</i></b>	Yes	328	88.2
	No	44	11.8
	Total	372	100.0
<b><i>Country from which faculty obtained their highest degree</i></b>	Saudi Arabia	167	44.9
	USA	87	23.4
	UK	91	24.5
	Egypt	27	7.3
	Total	372	100.0

**Faculty responses for both main scales (FPTS&FPTE).** Faculty members at KAU completed the survey items measuring the two main scales (49 items). These two main scales are as follows: the first scale is Faculty Perception of Teaching Support (FPTS), which includes four variables (administrators support, peers support, teaching resources support, and teaching training programs). The second scale is Faculty Perception of Teaching Efficacy (FPTE), which is the composite of six variables (course design, instructional strategy, technology usage, class management, interpersonal relation, learning assessment, and teaching training programs). This segment of the study demonstrates these scales and descriptive statistics of subscales including the revised scales reliability estimates, means, and SDs.

***Faculty Perception of Teaching Support (FPTS).*** This scale consists of four subscales which are perceptions of: Administrator Support (AS), Peer Support (PS), Teaching Resource (TR), and Teaching Training Programs (TTP).

Table 8 presents descriptive statistics for respondents to these four subscales and their composite of FPTS. The response choices for the items in these modified subscales instrument

ranged from strongly agree (6), agree (5), somewhat agree (4), somewhat disagree (3), disagree (2), to strongly disagree (1). Faculty in this study indicate that they receive a moderate support from their peers in the university with a mean of 4.39 (SD =1.06), which is referred to as almost agree with these following statements: “My colleagues consult with me on teaching,” “My colleagues provide opportunities for me to observe their teaching,” “ My colleagues would help me if I needed assistance with teaching,” “ My colleagues share their teaching experience with me.” Perception of teaching training programs had the second highest mean score 4.22 (SD = 1.08). Faculty perceived moderate agreement in relationship to the following statements: “I have participated in teacher training programs at my campus,” “Teacher training programs on my campus have helped me be a better teacher,” “ Teacher training programs on my campus are useful,” “Teacher training programs on my campus have led me to change how I am teaching,” “Teacher training programs have introduced me to new teaching methods.”

Additionally, the faculty in this study somewhat agree that they acquire a considerable amount of teaching resources from the university with a mean of 4.18 (SD =1.10), on a scale of 1-6. To some extent, they agree with these following statements: “My university provides sufficient facilities for high quality teaching,” “My university provides sufficient resources for high quality teaching,” “My university provides the technology and resources needed for high quality teaching,” “My university provides the necessary facilities and resources to help me improve student learning,” “My university provides tutoring or coaching resources to help me improve student learning.” However, when it comes to administration support, which is the fourth subscale of the teaching support instrument, faculty to some extent disagree that they have been given sufficient support from the department or university administrative staff (mean = 3.76, SD = 1.08). Faculty in this sample somewhat disagree with these following statements:

“University administrators at my institution care about teaching effectiveness,” “University administrators at my institution reward high quality teaching,” “University administrators at my institution expect faculty members to be high quality teachers,” “University administrators at my institution solicit input from faculty in implementing teaching related policies,” “ University administrators at my institution are concerned about making sure teaching loads are manageable.” To conclude, the sample faculty from KAU in this study believe that they obtain, in general, an adequate amount of the overall teaching support from the university (overall perception of teaching support mean = 4.14, which is slightly higher than somewhat agree).

Table 8

*Faculty Perception of Teaching Support*

		Teaching Resources	Administrative Support	Peer Support	Teaching Training Programs	FPTS	FPTE
N	Valid	372	372	372	357	372	343
	Missing	0	0	0	15	0	29
	Mean	4.18	3.76	4.38	4.22	4.14	4.97
	Std. Deviation	1.10	1.08	1.06	1.08	.86	.62

***Faculty Perception of Teaching Efficacy (FPTE).*** This scale consists of a composite of six subscales (course design (6 items), instructional strategy (5 items), technology usage (4 items), class management (6 items), interpersonal relation (3 items), and learning assessment (5 items)). The composite variable was computed as an average value from these six faculty teaching efficacy subscales (29 items). Table 8 displays the descriptive statistics for respondents to the composite of these six subscales of (FPTE). The response choices for the items in these modified subscales instrument ranged from 1 = strongly disagree to 6 = strongly agree. The

result provides evidence that the sample faculty in this study agree that they are efficacious teachers (mean = 4.97, SD=.62). On average, KAU faculty in this study sample feel efficacious about their teaching

### **The Study Research Questions**

The goal of this section is to answer the two study main research questions and to examine the relationships of a number of faculty characteristics and four dimensions of teaching support, namely: administrator support, peer support, teaching resource support, and teaching training programs to the faculty members teaching efficacy at KAU. The forced Enter Method of variables entry have been chosen in this multiple regression analyses to study the relationship between the predictor (or independent) variables and the criterion (or dependent) variable. For the missing data, the researcher used a pairwise deletion procedure.

In order to account simultaneously for continuous and nominal data, several ordinal, and nominal variables have been dummy-coded and included in the analysis. Faculty members who fall in the category were coded as 1 if the category applies to the faculty and 0 if not. For example, professional ranks such as faculty who ranked full professor, associate professor, assistant professor, or lecturer were each coded as 1 if the category applies to the faculty, while teaching assistant was considered as a reference group for these variables, thus it represents the constant or intercept values. Another example for the dummy coded variables is the place of obtaining the highest degree. The reference group in this category is faculty who got their highest degree from Saudi Arabia, while the rest of the countries (USA, UK, Egypt) were dummy coded as 1. Two variables were coded as a dichotomous variable, teaching experience were coded into novice faculty (1-5 years) as 0, while senior faculty (more than 6 years) were coded as 1. Also, the highest obtained degree is the second dichotomous variable where faculty with a Ph.D.

degree were coded as 1, and those with less than a Ph.D. were coded as 0. More explanations and tables were introduced in Chapter 3 of this study about these dummy coded procedures.

**Research question one: To what extent do various faculty characteristics (professional rank, years of teaching experience, STEM/non-STEM, gender, international vs. SA faculty member, highest degree, and place of obtaining the highest degree) predict the composite for faculty teaching efficacy (course design, instructional strategy, technology usage, class management, interpersonal relation, and learning assessment)?**

This question examines to what extent do the seven categorical and dichotomous various faculty characteristic variables namely (professional rank “Professor, Associate Professor, Assistant Professor, and Lecturer,” gender “Male & Female”, experience “Novice & Senior”, field “STEM/non-STEM”, place of obtaining the highest degree “SA, USA, UK, and Egypt”, citizenship “Saudi vs. international faculty member”, and highest degree Ph.D. vs less”) predict the composite variables of faculty teaching. A multiple regression analysis was conducted to determine the relationship between variables related to the faculty characteristics at KAU and their relationship to the notion of faculty teaching efficacy as faculty perceived it.

The bivariate correlation matrix in Table 9 indicates that out of the 13 variables embodied in the regression model, there are only four positive significant correlations between the dependent variable of teaching efficacy and the following four independent variables (being ranked professor, being senior faculty, being obtained your highest degree from Egypt, and being an international faculty member). These positive correlations are an indication of variability in the criterion variable; put differently, the higher the rank, the more the teaching efficacy. These correlations are as follows, ranked professor  $r(343) = .093, p < .05$ , faculty teaching experience  $r(343) = .216, p < .01$ , obtained your highest degree from Egypt  $r(343) = .174, p < .01$ , and

faculty citizenship  $r(343) = .239, p < .01$ . Additionally, there is one negative significant correlation between the criterion variable and the predictor variables of faculty field of teaching namely being faculty in the STEM track  $r(343) = -.116, p < .01$ . The overall magnitude of these five correlations are ranging from weak to moderate correlation.

Multicollinearity is an important assumption of multiple regression analyses, which impacts the significance of the regression coefficients, and impacts the variability magnitude of the criterion variable accounted by the predicted variables and increase the size of the standard errors. Multicollinearity emerges when intercorrelations among the predictor variables are too high represented by  $r = .7$  and over. Cohen et al. (2003) recommends setting cut-offs for tolerance below .10, and a variance inflation factor (VIF) above 10 as evidences to assess the existence of a series of multicollinearity involving the corresponding IV. Table 11 presents the tolerance and (VIF) magnitude, and it shows that both numbers are do not exceed the cut-off number. The tolerance values for all the predictor variables in the model are above .10 as well as the (VIF) value are less than 10, which demonstrates the absence of multicollinearity among these variables. Also, another way to evaluate multicollinearity is by assessing the magnitude of the intercorrelation among the predictor variables. In fact most issues associated with multicollinearity occur when variables are highly intercorrelated as Tabachnick & Fidell, (2007) had indicated and suggested caution when including any variables that are correlated at .70 or higher. These level of intercorrelations indicate that there is a possibility that two variables measure the same construct, and it may be more difficult to find statistically significant coefficients. As shown in table 9, there is no indication of multicollinearity due the fact that all the intercorrelation between the predictor variables do not exceed the cut-off number of .70, instead the intercorrelations among the predictors are considered weak to moderate correlation.

Table 9 Correlation Matrix

*Correlations Matrix*

	Faculty Teaching Efficacy	Professor	Associate	Assistant	Lecturer	Gender	Senior	Field	USA	UK	Egypt	Highest	Citizenship
Teaching Efficacy	1.00	.093*	.045	-.018	.007	.003	.216**	-.116**	.065	-.035	.174**	-.071	.239**
Professor	.093	1.00	-.117	-.278	-.194	-.142	.198	.202	-.048	.031	.229	-.243	.338
Associate	.045	-.117	1.00	-.312	-.218	-.054	.203	.091	-.081	.107	.028	-.273	.076
Assistant	-.018	-.278	-.312	1.00	-.520	-.036	.032	-.086	-.079	.077	-.053	-.652	-.165
Lecturer	.007	-.194	-.218	-.520	1.00	.140	-.080	-.084	.141	-.102	-.098	.698	-.013
Gender	.003	-.142	-.054	-.036	.140	1.00	-.081	.006	-.024	.099	-.024	.159	-.146
Senior	.216	.198	.203	.032	-.080	-.081	1.00	-.229	-.301	-.015	.009	-.288	.188
Field	-.116	.202	.091	-.086	-.084	.006	-.229	1.00	.133	.109	.153	-.095	.117
USA	.065	-.048	-.081	-.079	.141	-.024	-.301	.133	1.00	-.314	-.155	.164	.014
UK	-.035	.031	.107	.077	-.102	.099	-.015	.109	-.314	1.00	-.159	-.169	.024
Egypt	.174	.229	.028	-.053	-.098	-.024	.009	.153	-.155	-.159	1.00	-.103	.475
Highest	-.071	-.243	-.273	-.652	.698	.159	-.288	-.095	.164	-.169	-.103	1.00	-.086
International Faculty	.239	.338	.076	-.165	-.013	-.146	.188	.117	.014	.024	.475	-.086	1.00

\*  $p \geq .05$ , \*\*  $p \geq .01$

Table 10 summarizes the regression models that are analyzed for the first question. In the first model, where all the predictor faculty characteristic variables in question one were added (faculty professional rank “Professor, Associate, Assistant, Lecturer”, Gender “Female”, teaching experience “Senior”, Field “STEM”, place of obtaining the highest degree “USA, UK, Egypt”, Highest degree “Ph.D.”, Citizenship “international Faculty”), the result indicate that this model is statistically significant. In other words, the overall faculty characteristic variables are statically significant predictors of faculty teaching efficacy and uniquely accounted for a quite moderate portion roughly 14% of the variance in the criterion variable,  $R^2 = .138$ ,  $F [11, 331] =$

4.832,  $p < .001$ . Faculty characteristics are playing an important role in faculty belief in their teaching capability and influence their teaching efficacy.

Table 10

*Model Summary*

Mode	R	Adjusted Square	Std. Error of the Estimate	Change Statistics			Sig. F Change	
				R Square	F Change	df1		df2
1	.372 <sup>a</sup>	.138	.58263	.138	4.832	11	331	.000
2	.532 <sup>b</sup>	.283	.53463	.145	16.526	4	327	.000

a. Predictors: (Constant), International, Lecturer, UK HED, STEM, Female, Assoc, USA HED, Senior, Professor, Egypt HED, Ph.D.

b. Predictors: (Constant), International, Lecturer, UK HED, STEM, Female, Assoc, USA HED, Senior, Professor, Egypt HED, Ph.D., Teaching Training Programs, Peer Support, Teaching Resources, Administrative Support

The first model in Table 11 includes the predictor variables of faculty characteristics which are : professional rank “Professor, Associate Professor, Assistant Professor, Lecturer, and Teaching Assistant as a reference group” , gender “Female & Male as a reference ”, experience “Senior & Novice as a reference”, field “STEM/non-STEM as a reference”, place of obtaining the highest degree “Egypt, USA, UK, and SA as a reference”, citizenship “international faculty member vs Saudi as a reference.”, and highest degree Ph.D. vs less as a reference ". The results of the standardized coefficients for the regression analysis for the first model with all the predictor variables of faculty characteristics were included first, indicate that out of the 11 controlling variables, only five variables (senior faculty, non-STEM faculty, obtain the highest degree from USA and Egypt, and being international faculty) are statistically significant predictors of the criterion variable (Teaching Efficacy),  $t[331]= 3.066$ ,  $\beta = .198$ ,  $p = .002$ ,

$t[331] = -2.604$ ,  $\beta = -.148$ ,  $p = .010$ ,  $t[331] = 3.138$ ,  $\beta = .192$ ,  $p = .002$ ,  $t[331] = 2.600$ ,  $\beta = .167$ ,  $p = .010$ , and  $t[331] = 2.066$ ,  $\beta = .132$ ,  $p = .040$ , respectively.

The positive correlation of being senior faculty at KAU shows that senior faculty are higher level of teaching efficacy than novice faculty. Faculty who obtained their highest degree from the USA and Egypt are more efficacious teachers than those attain their highest degree from UK and SA. Additionally, the positive value for being international faculty establishes evidence that non-Saudi faculty display higher efficacy in teaching than their counterpart Saudi faculty. On the contrary, the negative relationship of being faculty in a STEM fields with teaching efficacy exhibit that faculty in a STEM field are more likely to manifest lower level of teaching efficacy than their counterpart's faculty in the non-STEM fields. On the other hand, the rest of faculty characteristic predictor variables (Being ranked as Professor, Associate or Lecturer, being a Female faculty, obtained highest degree from UK, and being faculty with a Ph.D. degree) were not statistically significant predictors of teaching efficacy as it illustrates in model one of Table 11.

Table 11

*Coefficients for the Multiple Regression of the first question*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.58	.121		37.76	.000		
	Professor	.022	.126	.010	.175	.861	.731	1.368
	Assoc	.020	.108	.010	.185	.854	.824	1.213
	Lecturer	.090	.124	.064	.720	.472	.327	3.054
	Female	.059	.066	.048	.897	.370	.924	1.082
	Senior	.274	.089	.198	3.066	.002	.625	1.601
	STEM	-.184	.071	-.148	-2.604	.010	.811	1.233
	USA HED	.279	.089	.192	3.138	.002	.698	1.432
	UK HED	.080	.085	.055	.931	.352	.735	1.361
	Egypt HED	.397	.153	.167	2.600	.010	.632	1.583
	Ph.D.	.095	.121	.074	.786	.432	.291	3.441
	International	.253	.122	.132	2.066	.040	.634	1.578
2	(Constant)	3.434	.188		18.28	.000		
	Professor	-.008	.116	-.004	-.068	.946	.725	1.378
	Assoc	.003	.100	.002	.030	.976	.822	1.217
	Lecturer	.078	.115	.056	.680	.497	.324	3.088
	Femal	.073	.062	.059	1.174	.241	.873	1.145
	Senior	.316	.083	.228	3.827	.000	.615	1.626
	STEM	-.185	.066	-.148	-2.806	.005	.785	1.275
	USA HED	.300	.082	.206	3.665	.000	.693	1.442
	UK HED	.105	.079	.073	1.331	.184	.726	1.377
	Egypt HED	.377	.141	.158	2.680	.008	.627	1.595
	Ph.D.	.139	.112	.109	1.238	.217	.285	3.509
	International	.179	.114	.094	1.569	.118	.615	1.626
	Teaching Resources	.008	.038	.014	.213	.831	.478	2.093
	Administrative Support	.120	.041	.209	2.887	.004	.419	2.389
	Peer Support	.112	.034	.192	3.305	.001	.648	1.544
	Teaching Training	.027	.032	.047	.836	.404	.683	1.464

a. Dependent Variable: Faculty Teaching Efficacy

**Research question two: To what extent does faculty perception of teaching support (administrator support, peer support, teaching resources support, and teaching training programs) predict the composite for faculty teaching efficacy (course design, instructional strategy, technology usage, class management, interpersonal relation, learning assessment, and teaching training programs) after controlling for faculty characteristics?**

For this second question of this study a multiple regression analysis was conducted to determine the relationship between variables related to the four dimensions of teaching support from the perspective of faculty members at KAU and their relationship to the notion of faculty teaching efficacy as faculty perceived it after controlling for faculty characteristics. The faculty characteristics were included in the first block then the four predictor variables were entered into the second block as a two models regression analysis.

The bivariate correlation matrix in Table 12 indicates there was a significant positive correlation between the dependent variable of teaching efficacy and the four independent variables that were included in the model. These correlations range from .264 to .344. as follows, administrator support  $r(343) = .344, p < .001$ , peer support  $r(343) = .310, p < .001$ , teaching resources support  $r(343) = .268, p < .001$ , and teaching training programs  $r(343) = .264, p < .001$ . Overall faculty teaching efficacy was positively significantly correlated to these four teaching support variables and the magnitude of the correlation ranged from weak to moderate correlation.

Besides reporting the model correlation as one of the important multiple regression analyses assumption, multicollinearity have been reported as another assumption. Table 11 in

this study shows that the value of both VIF and tolerance did not exceed the cut-off number in both criterion of measurement that tolerance values for all predictor variable in the model are above .10, and the VIF values are below 10. Also, the correlation matrix among the predictor variables in Table 9 was evaluated to find out the possibility of multicollinearity. Nevertheless, all variables in this study are found to be intercorrelated at less than .6, so there is no indication of multicollinearity.

Table 12

*Correlations Matrix*

		Faculty Teaching Efficacy	Teaching Resources	Administrative Support	Peer Support	Teaching Training Programs
Pearson Correlation	Faculty Teaching Efficacy	1.000	.268***	.344***	.310***	.264***
	Teaching Resources	.268	1.000	.680***	.391***	.442***
	Administrative Support	.344	.680	1.000	.533***	.463***
	Peer Support	.310	.391	.533	1.000	.421***
	Teaching Training Programs	.264	.442	.463	.421	1.000

\*\*\*  $p \geq .001$

Table 10 summarizes the regression models that are analyzed for the second question. For the second model, where all the predictor variables of faculty characteristics namely (faculty professional rank, teaching experience, STEM/Non-STEM, gender, international vs. SA faculty member, highest degree, and place of obtaining the highest degree) and the four faculty teaching support variables were added, the results indicate that this model is still statistically significant and accounted for 28% of the variance in the criterion variable of teaching efficacy,  $R^2 = .283$ ,  $F$

[4, 327] = 16.526,  $p < .001$ . We notice that the  $R^2$  Change in this second model when compared to the first model is R Square Change = .145. This shows that even after controlling for the faculty characteristics variables, the four independent teaching support variables (administrator support, peer support, teaching training programs, and teaching resources) are significant predictors of faculty teaching efficacy and uniquely accounted for roughly 15% of the variance in the criterion variable. Faculty teaching support variables are uniquely explained more than a half of the variance in teaching efficacy which reflects the fact that the supports faculty acquired in their teaching from the university promote the most of faculty efficacy beliefs in their teaching competences.

Table 11 illustrate the result of the coefficients for the regression analysis. The first model has been explained in detail in the first question, so for this second question, this part of the study explains the second model and present the changes occurred from the first question. In the second model with all sets of the four faculty teaching support predictors being added to the model, the results of the standardized coefficients illustrates that only four of the controlling variables (the citizenship variable is no more significant) and two of the predictor variables (administrative support and peer support) are statistically significant predictors of the criterion variable (Teaching Efficacy),  $t[327]= 2.887$ ,  $\beta = .209$ ,  $p = .004$ , and  $t[327]= 3.305$ ,  $\beta = .192$ ,  $p = .001$ , respectively.

Administrative support and peer support have positive statistically significant coefficient values. This positive coefficient results indicate that faculty who have received more administrative and peer supports in their teaching are more likely to have higher level of teaching efficacy compared to their colleagues who did not receive any support. On the other hand, the other two faculty support predictor variables (teaching training programs and teaching resources)

and the remaining variables of faculty characteristics are not statistically significant predictors of the faculty teaching efficacy.

As shown above, when considering teaching support factors that influence faculty teaching efficacy, administrative support and peer support are the only significant positive predictors of overall faculty teaching efficacy while holding the other faculty characteristics predictors. On the other hand, the other two teaching support variables namely: teaching resources support, and teaching training programs are not significant predictors for the criterion variable of teaching efficacy.

**Parsimonious model.** To simplify the previous models, parsimony analysis has been pursued by rerunning the regression model including only the significant predictors in both questions one and two. In the new model with only the significant predictors, there was no evidence for the existence of a multicollinearity involving the corresponding predictor variables.

The results of the model summary Table 13 illustrated that the model of multiple regression analysis for the significant predictors variables for teaching support and demographic backgrounds (administrative support, peer support, being senior faculty, being obtained your highest degree from USA or Egypt, and being an international faculty member) collectively explained a quite moderate portion, approximately 27% of the variance in the overall teaching efficacy,  $R^2 = .267$ ,  $F [7, 335] = 17.403$ ,  $p < .001$ . The overall model is statistically significant. The results in Table 14 of the standardized coefficients for the regression analysis for the parsimonious model, with only the significant predictor variables of teaching support and faculty characteristics were included, indicate that all the variables in the model are still significant predictors of faculty teaching efficacy except for being international faculty, which is no longer a

significant predictor of the criterion variables. The magnitude of the standardized Beta weights for all significant predictors are still almost the same as in the other analyses explained above..

Table 13

*Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.516 <sup>a</sup>	.267	.251	.53428

a. Predictors: (Constant), STEM, Administrative Support, USA HED, International, Senior, Egypt HED, Peer Support

Table 14

*Coefficients<sup>a</sup>*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.683	.151		24.339	.000		
	STEM	-.155	.061	-.125	-2.537	.012	.905	1.105
	Senior	.338	.072	.244	4.687	.000	.806	1.241
	USA HED	.247	.074	.169	3.345	.001	.853	1.172
	Egypt HED	.332	.131	.140	2.535	.012	.720	1.388
	International	.200	.107	.105	1.878	.061	.702	1.424
	Administrative Support	.122	.032	.213	3.799	.000	.699	1.430
	Peer Support	.124	.032	.212	3.818	.000	.708	1.412

a. Dependent Variable: Faculty Teaching Efficacy

## Summary

This chapter presented the quantitative findings of this study based on two main sections. The first section reported the descriptive analysis of respondents for the whole sample. This section examined the demographic characteristics of the respondents, and the two survey respondents of the faculty teaching support FPTs (administrator support, peer support, teaching

resources, and teaching training programs), and the composite of faculty teaching efficacy FPTE (course design, instructional strategy, technology usage, class management, interpersonal relation, learning assessment, and teaching training programs).

The second section attempted to answer the study main two questions in predicting faculty teaching efficacy from the previous faculty demographic characteristics and the four faculty teaching support variables. The level of faculty teaching efficacy differed significantly based on the level of administrator support, peer support and overall teaching support that faculty at KAU acquired from the perspective of faculty members, explaining approximately 14% of the explained variance in the teaching efficacy perceived by faculty at KAU. It was also found that faculty teaching efficacy differed by a number of KAU faculty characteristics namely being a senior faculty in a Non-STEM field who obtained his highest degree from either USA or Egypt and being a Non-Saudi faculty, which significantly predicts faculty teaching efficacy, and collectively explained a quite moderate portion approximately 13% of the variance in the overall teaching efficacy. On the other hand, two types of support were not determined to be best predictors of faculty teaching efficacy (teaching resources, and teaching training programs), which were not statistically significant predictors of faculty teaching efficacy. Additionally, being faculty who are ranked Professor, Associate or Lecturer from a STEM field, faculty gender, being obtained your highest degree from UK, and being Saudi faculty, whose highest degree is Ph.D. were not statistically significantly predictors of faculty teaching efficacy. The directions of the correlations for both STEM field and highest degree of these relationships were negative. A more detailed discussion of the findings and implications of this study is presented in chapter five.

## **Chapter 5**

### **Discussion, Conclusions, and Recommendations**

#### **Overview**

Faculty members in higher education play an essential role regardless of the nature of their appointments and responsibility either as teachers, researchers, or through other forms of service. There are a number of challenges related to faculty teaching, as explained in detail in chapter one, which are the leading reasons and sources of inspiration for this study to examine the possible solutions and theories that might help uncover variables and factors that impact these challenges in the context of higher education in Saudi Arabia. Among these theories is the framework of teaching efficacy, which measures faculty perception of the extent to which they feel efficacious in being good teachers. This study explored the relationship between teaching efficacy and faculty perceptions of teaching supports, including perceptions of administrator support, peer support, teaching resource support, and teaching training programs. This study also looked at the relationship between teacher efficacy and several faculty characteristics including: professional rank (Professor, Associate Professor, Assistant Professor, and Lecturer), gender (male and female), experience (novice and senior), field (STEM/non-STEM), place of obtaining the highest degree (SA, USA, UK, and Egypt), citizenship (Saudi vs. international faculty member), and highest degree (Ph.D. vs less than Ph.D.).

The significance of this study is that it contributes to the literature at an institution in Saudi Arabia namely King Abdulaziz University (KAU) for the first time, and in Saudi Arabia on the whole by exploring how faculty members at KAU experience the notion of self-efficacy in teaching. The goal is to use the findings to implement practical ideas to help improve faculty members teaching performance and, in turn, students' achievement. This is accomplished with

the intention of assisting leaders and administrators to build sufficient faculty teaching development programs that might develop faculty teaching skills and competencies with a consideration of the results and variables that this study highlighted.

This chapter begins with presenting the leading findings from both the descriptive data and the regression analyses in detail. The researcher tries to interpret these results in light of the findings and his experiences in Saudi Arabia and at KAU. The next section presents the recommendations for KAU administrators and department chairs, as well as SA higher education system officials to improve faculty teaching efficacy. The study limitations are addressed to inform the readers about the study boundaries that restrict the interpretation of the results. Recommendations for additional studies and research introduced in this chapter to help prospective researchers explore new questions related to this study. The chapter concludes with a summary for the study focal ideas that are presented on the chapter.

### **Interpretation and Discussions of the Findings**

**Faculty characteristics findings.** The research survey was distributed to approximately 5000 faculty members at KAU; however, only 372 were useable surveys. Generally speaking, the study sample is representative of the population at KAU and only slightly different than the larger faculty population in SA. As such, the results ought to be generalized to the larger SA population with caution. There were a few characteristics of the sample that are worth noting as being important. First, approximately 56% of the 372 complete respondents of faculty members are female and the rest are male. These proportions are consistent with gender ratios at KAU and in Saudi higher education population (Ministry of Education, 2018).

Second, regarding the highest degree obtained by faculty members in the sample, the data shows that 64% of the faculty at KAU obtained a Ph.D. degree and 36% were faculty with a

master or bachelor's degrees. These values in KAU are higher than the national number in the Saudi higher education system; nationally, 42% of SA faculty hold a Ph.D. degree while the rest are faculty with master, bachelor, and diploma degrees (Ministry of Education, 2018). This means that the sample rank is not necessarily representative of the Saudi higher education population. By breaking down faculty rank percentage at KAU sample, full professors account for 9%, associate professors account for 12%, assistant professors account for 43%, lecturers account for 27%, and teaching assistants account for 10 %. These values show that the lowest percent of faculty are those with full professor rank followed by associate professor.

**Characteristics finding related to the regression model.** This part of the study examines the extent to which the seven faculty characteristic variables (namely: professional rank "Professor, Associate Professor, Assistant Professor, and Lecturer," gender "Male & Female," experience "Novice & Senior," field "STEM/non-STEM," place of obtaining the highest degree "SA, USA, UK, and Egypt," citizenship "Saudi vs. international faculty member," and highest degree Ph.D. vs less") predict the composite variables of faculty teaching efficacy.

In the regression model, with all variables entered, only five variables (senior faculty, STEM faculty, obtain the highest degree from USA or Egypt, and international faculty) are statistically significant predictors of the criterion variable of teaching efficacy. There was also one negative coefficient in the regression – being in a STEM field. Being a senior faculty member (defined as more than 6 years) was a predictor of faculty teaching efficacy; even though, at KAU, more than two-thirds of faculty members would be considered novice faculty. It seems that the more time that faculty spend in academia the more teaching experiences and skills they might get and therefore the more their sense of teaching efficacy might be higher. Prior literature reviewed for this study is consistent with this result and show that faculty with five or more years

of teaching experiences express higher level of teaching efficacy, compared to faculty with fewer years of teaching experiences (Chang et al., 2011; Chang et al., 2010; Schoen & Winocur, 1988; Tschannen-Moran & Hoy's, 2007).

Additionally, the results of the standardized coefficients for the regression analysis showed that faculty who obtained their highest degree from USA and Egypt are more efficacious teachers than those who attain their highest degree from UK and SA. This data showed that faculty who graduate from USA or Egypt have higher sense of self-efficacy compared to faculty graduates from somewhere else and the USA standardized coefficients beta weight is higher than the Egyptian beta weight, which indicates a stronger level of teaching efficacy accounted for faculty who attain their highest degree from USA. One possible explanation of this result is that, in general, the majority of faculty members at KAU and SA higher education institutions obtained their Ph.D. from the USA (65% USA vs. 10% all Arabic countries including Egypt). Also, graduate students in Saudi universities (from the researcher experiences) prefer to seek their graduate study in the USA over Egypt higher education for many reasons including the level of preparation they obtain by the diverse courses and noticeable pedagogical experiences; not to mention that USA has the highest pool of Saudi graduate students comparing to any other country (Denman & Hilal, 2011).

The positive value for being international faculty establishes evidence that non-Saudi faculty display higher self-efficacy in teaching than their counterpart Saudi faculty. Perhaps one explanation for this lower level of teaching efficacy expressed by Saudi faculty is that Saudi faculty members at SA institutions tend to focus more on research than teaching since research pays more dividends in terms of promotions, monetary benefits and status. Even though international faculty are allowed to be promoted by SA higher education policies, they are not

entitled to any monetary benefits, such as raises. Therefore, international faculty members at SA higher education institutions tend to focus more on the teaching part of their job in order to prove their worth and secure their jobs due to the fact that their contracts with the university are subject to renewal-unlike Saudi faculty members, who hold tenure positions, and get paid on a constant schedule salary increasing based on the number of years of employment, and not related to any teaching excellence or other work responsibility. These results are consistent with prior studies (Qureshi, 2006; Smith & Abouammoh, 2013). Another possible explanation is the fact that the SA Ministry of Education regulations places a substantial value on faculty research load in favor of their teaching load. In other words, universities in SA higher education do not allocate adequate teaching awards for their faculty (Al-Ghamdi & Tight, 2013; Qureshi, 2006; Smith & Abouammoh, 2013). As a result, faculty at SA institutions place more attention on research than they devote to teaching responsibilities or service. Perhaps administrators in SA higher education need to change the promotional criteria or change the basis of salary increase to recognize faculty members' teaching quality, attract qualified faculty, and encourage pedagogical research excellence.

Results of this study suggest that faculty in STEM fields are more likely to manifest lower level of teaching efficacy than their counterpart faculty in the non-STEM fields. There is a stereotype that STEM faculty are less effective at developing teaching skills and in turn possess low sense of teaching self-efficacy, and much evidence supports this argument (Chang et al., 2011). The result is consistent with research in SA higher education, which showing that faculty in science schools (STEM) indicated different levels of efficacy in teaching comparing to those in a literary school (Ahmed, 2016). Perhaps one explanation for this result is that faculty in the STEM fields do not take as many pedagogical courses in graduate school as do those in non-

STEM fields. This argument is supported by other researchers that show differences by discipline and field in teaching efficacy (Bandura et.al., 2001; Norton et al., 2005). In addition, faculty from diverse departments apply different teaching methods, which are reflected in their field of study, and as a result these individuals adopt different concepts of teaching norms (Norton et al., 2005).

The rest of the faculty characteristic predictor variables (being ranked as Professor, Associate or Lecturer, being a female faculty, and holding a Ph.D. degree) were not statistically significant predictors of faculty teaching efficacy. One unexpected result in such a segregated educational system was that male and female faculty scored the same on the teaching efficacy scale. Several studies in this literature review also concluded no gender differences in teaching efficacy (Tschannen-Moran & Gareis, 2007; Tschannen-Moran & Gareis, 2004; Shavaran, Rajaeepour, Kazemi & Zamani, 2012). Nevertheless, other studies indicate differences in the faculty level of self-efficacy in teaching in favor of female faculty (Fives and Looney, 2009; Landino & Owen, 1988; Norton et al., 2005; Schoen & Winocur, 1988).

**Faculty perception of teaching support (FPTS) Findings.** Faculty members at KAU completed two surveys consisting of 49 questions. The first scale is Faculty Perception of Teaching Support (FPTS), which includes four ordinal variables (administrator support, peer support, teaching resource support, and teaching training programs). Faculty in this study indicate that they receive moderate support from their peers in the department and university in the form of consulting with their peers in teaching, observation, and experience sharing. Even with the absence of any formal activities that might help faculty to communicate and exchange their experiences, faculty at KAU still find a way to connect with each other. Faculty perceived moderate support for their teaching through teacher training programs. These training programs

are mostly administrated at KAU by the Center for Teaching and Development, and they address three development topic teaching, research, and leadership skills. The pedagogy training comprises only one third of the center's programs, and faculty members that participated in these programs expressed that they found the training helpful in their teaching tasks, as it equipped them with necessary teaching methods and skills (Alsaqaf, 2008).

Additionally, faculty in this study to some extent agree that they have been supplied with the essential teaching resources from KAU. They somewhat agree that the university provides sufficient facilities, resources, and technology that help for high quality teaching. Teaching resources is one of the important tools that helps ease faculty teaching and learning activities. Prior research shows that quite a few of faculty at SA higher education institutions do not know how to use some of these resources because of the lack of training and even if they know how to utilize them several of the needed resources are not always available (Alsharedh, 2017; Alanazy, 2016; Sadeen, 2017).

The fourth and last sub-scale of the teaching support scale is administration support and faculty to some extent disagree that they have been given sufficient support from the department or university administrative staff. Faculty in this sample somewhat disagree that administrators at KAU care about teaching effectiveness or reward high quality teaching. Perhaps this is because administrators at KAU mostly care about the overall university functioning and policy implementation in favor of taking care of teaching and learning, which they delegate to faculty. To put it another way, administrators are preoccupied with other university management duties, so they do not perceive teaching as important, nor do they think they have to support it (Aldalae, 2018; Al-Ghamdi, & Tight, 2013; Al-Ghreimil, & Colbran, 2013). Consequently, administrators at KAU need to make sure that they work with faculty members in the way that

help them improve their teaching effectiveness and equip them with the needed resources and support.

**Teaching support finding related to the regression model.** Multiple regression analysis was conducted to determine the relationship between the four dimensions of teaching support (administrator support, peer support, teaching resource support, and teaching training programs) and their relationship to faculty teaching efficacy after controlling for faculty characteristics. The variables accounted for roughly 15% of the variance in the criterion variable. The results of the standardized coefficients in the second model illustrate that only two of the predictor variables of the teaching support (Administrative Support and Peer Support) are statistically significant predictors of Teaching Efficacy.

Administrative support has a positive statistically significant coefficient, which indicates that faculty who perceive greater administrations' supports for their teaching are more likely to have higher levels of teaching efficacy. This is an obvious result since administrators responsibility in any academic institution is to influence their employees' enthusiasm and productivity by the way they communicate with them and the means by which they operate the organization (Hekman, Steensma, Bigley & Hereford, 2009). It is crucial for leaders in higher education to build a welcoming work environment for instructors to encourage instructor's communication and collaboration, which can enhance teaching quality and instructors' teaching efficacy (Chang et al., 2010).

Perceived peer support of teaching is also related to higher levels of teaching efficacy. This finding is supported by prior literature, which shows that support and feedback from peers are one of the best ways to improve teaching quality and promote teaching effectiveness (Alyafi & Alfayez, 2015; Chang et al., 2010). Peer support is one of the most cited factor and strongest

dimension playing a main role in structuring teaching quality and enhancing instructor efficacy beliefs (Chang et al., 2010).

On the other hand, the other two faculty support predictor variables related to perceptions of teaching training programs and teaching resources are not statistically significant predictors of faculty teaching efficacy. This is surprising because Saudi institutions of higher education have worked to enhance teacher training programs in order to keep faculty up-to-date on various educational areas, and to support their attainment of new teaching skills (Alrweithy & Alsaleem, 2014). As a matter of fact, a lack of effective teaching preparation programs results in low student learning outcomes, high faculty turnover, and low student graduation rates (Lancaster et al., 2014). Also, contrary to the results of this study, a study at King Saud University in SA showed significant differences in teaching performance, from the perspective of students, between faculty who had received one training session compared to those who had received more than one session (Al-Sudairy, Ismail, Al ash-Sheikh & Metwaly, 2011). One possible explanation for such a discrepancy is the use of unplanned training programs that are not data-driven and are constructed to brush up on faculty members teaching skills and competency. Also, it might be due to the fact that a number of institutions of higher education tend to minimize the importance of teaching training (Chang et al., 2011; Morris & Usher, 2011).

Regarding the teaching resources, the finding of this study corresponds to the finding of another study by Tschannen-Moran and Woolfolk Hoy (2002) who found that teaching efficacy is weakly related to the teaching support related to resources. The weak correlation between perceived teaching resources and teaching efficacy variables must be interpreted cautiously. For one thing, perhaps the interpretation of the concept of “resources” or what resources stand for is not universal and might be defined differently in various environments and by different faculty.

Also, it is possible that teaching and its support, compared to the support for research, have been undervalued by universities in some research-oriented institutions (Chang et al., 2010). Perhaps teaching resources are not related to teachers' sense of teaching efficacy when they are not clear about their teaching responsibilities or feel it less important than research (Chang et al., 2011). Prior research shows that teaching efficacy is related to teaching resources (Chang et al., 2010; Tschannen-Moran & Hoy, 2007). In the context of higher education in SA particularly, studies related to the consequences of the poor teaching performance of SA faculty members express the ideas that the lack of teaching resources is one of the leading reasons for the poor teaching performance of students in a number of institutions (Al Casey, 2012; Al-Jahani, 2012; Joud & Zayed, 2012). Therefore, even though this study found that perception of teaching resources is not a statistically significant predictor of faculty teaching efficacy, other studies demonstrate the opposite, and institutions of higher education need to continue to provide these types of supports.

### **Implications and Recommendations of the Findings for Improving Teaching Efficacy**

**Implications related to faculty characteristics.** One interesting finding in this study was that the level of teaching efficacy for STEM faculty was considerably lower for faculty in other disciplines. Perhaps one possible course of action that might help KAU encountering such a problem is through constructing a faculty orientation. This might include providing additional pedagogical training to STEM faculty to help boost their sense of teaching efficacy.

Since novice faculty demonstrated a lower sense of teaching efficacy than more senior faculty, perhaps administrators at KAU need to provide more support for more novice faculty members. One recommended plan might be to have administrators and department chairs at KAU establish a mentoring program for novice faculty including orientation programs, scheduling regular meetings, and encouraging faculty to share their experiences which might help

enhance their teaching efficacy. It also might be useful to create a pedagogical environment that incorporates workshops and social activities in which faculty from different departments and with diversified experiences share their knowledge and experiences with others.

This study indicates that faculty who obtained their highest degree from the USA and Egypt are more efficacious teachers than those who earn their highest degree from other countries. Perhaps one suggestion might be for administrators and department chairs to identify institutions in countries known for their excellence higher education system and encourage future faculty members to pursue their graduate studies in these countries or institutions. In like manner, this study establishes evidence that non-Saudi faculty display higher teaching efficacy than their Saudis faculty counterparts. Perhaps leaders at the Ministry of Education (controlling promotional policies at SA) should change their promotional policies or change the basis of salary increase to recognize faculty members' teaching quality. Also, KAU leaders might have the opportunity to establish rewards for teaching excellence, attract qualified faculty, and encourage pedagogical research and projects that might promote faculty teaching skills and in turn their teaching efficacy.

**Implications related to teaching support.** The study showed that faculty who obtain more teaching support from their administrators are more likely to attain higher levels of teaching efficacy compared to their colleagues who did not receive that level of support. This study suggests that administrators, including department heads and chairs, should be aware of what faculty need to be more successful in teaching while providing them with necessary support that might include a combination of variable and tangible support. They could work to provide and maintain a welcoming, warm and friendly working environment where faculty can communicate and support each other.

Additionally, the study established the importance of peer support as a factor in influencing teaching efficacy. Utilizing peer support, administrators and department chairs are encouraged to create an environment where all faculty meet in an informative setting such as an orientation to help faculty work in groups, learn about each other, form regular seminars and meetings, and gain familiarity with each other's research interests. These activities might result in more collaboration in the future. Comparatively, faculty members should strive to form an instructional coalition where they share knowledge and experiences that lead them to share positive feedback with peers.

Another surprising result in the study was that faculty didn't perceive that the teaching training programs implemented by the Center for Teaching and Learning Development (CTLTD) at KAU contributed to better teaching efficacy. This is an important finding, as the CTLTD should consider reviewing its programs and implement an overall evaluation of its work. The evaluation would be data-driven in a way that would make decision making more informed and provide clear future steps. Likewise, faculty didn't perceive that teaching resources provided by KAU were sufficient to yield positive results related to teaching efficacy. Accordingly, KAU officials should review the validity and effectiveness of these resources in a way that would make them more useful. KAU might also introduce new resources that have been proven useful and effective.

### **Limitation and Recommendations for Future Study**

Some unavoidable limitations of this study deserve attention. The results of this study may have been impacted by the university educational culture at KAU and in SA overall. The main source of data is university faculty perception and self-report of teaching support and its relation to their sense of teaching efficacy rather than upon their actual teaching ability, Brown

and Bakhtar (1988) maintained that teachers' self-reports might not match their real teaching behavior. Therefore, the notion of "good faith" is applied, and the correlation between faculty teaching efficacy and teaching support and other characteristics might be investigated by direct observation in future research. More studies are needed on faculty perception of teaching efficacy and its six dimensions separately on one part and their relationships to the four dimensions of faculty support and other faculty characteristic at KAU and other Saudi universities on the other part. Limited ability to generalize study findings may exist because the data on faculty perceptions in teaching efficacy and teaching support and their sub-scales are limited only to KAU faculty members and gathered in a non-random sampling technique. This study is only limited to a number of faculty characteristics and two survey measures, and perhaps future research can look at other characteristics and apply more rigorous measurements of teaching efficacy for faculty members at higher education system at KAU and other SA institutions.

Additionally, the characteristics of the study's sample should reflect the characteristics of the entire population of the faculty at KAU. Since the contribution of the teaching support to explain faculty teaching efficacy is overall low and two of the teaching support factors are not significant, it is a fertile area for future research where more teaching support factors could be investigated including various type of resources and different set of training programs. Future studies might incorporate each one of these dimensions as a criterion variable and choose more rigorous statistical analyses. Faculty teaching excellence is a complex concept and cannot necessarily be explained using a single measurement of teaching efficacy, hence more insightful teaching perceptions and measurements need to be investigated. Lack of studies related to the

notion of teaching efficacy retrieved in the context of Saudi and Arabic literature, which make it hard to identify the gap and know the need by faculty in the Saudi context.

## **Conclusion**

Faculty members are the cornerstone of any higher education system regardless of the nature of their occupation. Considering faculty essential roles, the study explored the perception of faculty teaching efficacy from the perspective of KAU faculty and investigated how a number of teaching support variables and several demographic factors predicted faculty's perception of teaching efficacy at KAU in SA. This study strived to fill a piece in the large puzzle of literature and examine the role of factors that influence faculty perception of teaching efficacy in the context of SA higher education. The results of the study establish a foundation for future research on the subject since this area of study is under-researched in the context of SA higher education.

This dissertation established some outcomes that were expected, yet it also left some unresolved issues that need more consideration. Results suggest that there are several teaching support and demographic factors that significantly predict KAU faculty perception of teaching efficacy. These factors include teaching support provided by administration and peers, being a senior or a non-STEM faculty, or having obtained a doctorate degree from the USA. However, faculty in the sample didn't perceive the usefulness of training and resources pertaining teaching support. Additionally, faculty rank and gender did not seem to impact teaching efficacy. Interestingly, the results of the study conform with prior research.

It is noteworthy to state here that research has shown that perceived faculty teaching efficacy tends to be strongly related to teaching performance and effectiveness (Bandura, 1997). Similarly, faculty perceptions of their teaching effectiveness are associated with their teaching

efficacy (Swars, 2005). However, it is important to note that being a good and effective faculty does not necessarily entail obtaining a high sense of teaching efficacy, i.e. correlation is not causation. Looking at things from another perspective, knowing that a great deal of the teaching efficacy measures are self-reported scales, these scales are known for their lack of accuracy where, in our case, some of the faculty members might not rate themselves accurately. Therefore, perhaps they score low in the level of their teaching efficacy even though they demonstrate good qualities of effective teaching. Overall, teaching efficacy does not cause effective teaching although both concepts are related.

I am optimistic that the results of this study would motivate leaders at KAU to create a relaxed, collegial environment for faculty to encourage intercommunication, collaboration, and sharing experiences. Also, the researcher recommended establishing an orientational program for faculty members as a way to break the ice and get new faculty acquainted with senior faculty and encourage mutual support. The orientation would also introduce faculty to all teaching support resources provided by the university.

More studies are needed surrounding faculty perception of teaching efficacy and its relation to other teaching support factors and other faculty characteristics in Saudi universities. Also, future research should dig deeper into study predictors, particularly those predictors that prior research suggested would be related to teaching efficacy, and precisely for which the current study results were unconfirmed. For example, more teaching support factors could be investigated including various types of resources and different set of pedagogical training programs. KAU already provides a number of teaching resources that are, to some extent, supportive of faculty teaching efficacy. Nevertheless, more data-driven inquiries are needed to examine the significance of these resources and cultivate a new set of support variables for

faculty members at KAU generally and specifically for those predictors that the results of this study left inconclusive.

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## APPENDIX A

### Faculty Perceived Teaching Support (FPTS) questionnaire

#### Teaching Resources.

1. My university provides sufficient facilities for high quality teaching.
2. My university provides sufficient resources for high quality teaching.
3. My university provides the technology and software resources needed for high quality teaching.
4. My university provides the necessary facilities and resources to help me improve student learning.
5. My university provides tutoring or coaching resources to help me improve student learning.

#### Administrative Support.

1. University administrators at my institution care about teaching effectiveness.
2. University administrators at my institution reward high quality teaching.
3. University administrators at my institution expect faculty members to be high quality teachers.
4. University administrators at my institution solicit input from faculty in implementing teaching related policies.
5. University administrators at my institution are concerned about making sure teaching loads are manageable.

#### Peer Support.

1. My colleagues consult with me on teaching.
2. My colleagues provide opportunities for me to observe their teaching.
3. My colleagues encourage and support me if I try something innovative in my teaching.
4. My colleagues would help me if I needed assistance with teaching.
5. My colleagues share their teaching experiences with me.

#### Teaching Training Programs.

- 1- I have participated in teacher training programs at my campus.
- 2- Teacher training programs on my campus have helped me be a better teacher.
- 3- Teacher training programs have introduced me to new teaching methods.
- 4- Teacher training programs on my campus have led me to change how I am teaching.
- 5- Teacher training programs on my campus are useful.

## APPENDIX B

### Faculty Teaching Efficacy (FTE) Questionnaire

#### Course design.

1. I feel confident in my ability to create meaningful syllabi for the courses I teach.
2. I am confident that I have established clear and comprehensive teaching objectives in my courses.
3. I feel confident that I select appropriate teaching materials in my courses.
4. I feel confident that my courses are organized in a logical way.
5. I feel confident that the assignments in the class are clearly organized and designed to measure the appropriate learning outcomes.
6. I am sufficiently prepared to teach my classes.

#### Instructional strategy.

1. I teach according to students' various levels of readiness.
2. I utilize effective teaching methods to improve students' learning.
3. I modify my teaching activities during class sessions in order to sustain students' attention.
4. I have confidence in my ability to inspire and maintain students' learning motivation.
5. I utilize various teaching techniques to stimulate students' higher-level thinking skills.

#### Technology usage.

1. I am confident in my ability to utilize technology to enhance my teaching.
2. I use appropriate educational technology in my courses.
3. I know how to produce relevant teaching media.
4. I know how to operate various types of teaching technologies.

#### Classroom management

1. I am confident in my ability to manage the learning environment, to actively engage all learners.
2. I know how to effectively organize the physical space of the classroom.
3. I am confident in my ability to facilitate effective classroom rules and routines.
4. I know how to create and promote an environment that is conducive to student learning.
5. I know how to help learners work productively and cooperatively with each other to achieve learning goals.

6. I offer learning experiences that encourage active engagement of students.

**Interpersonal relation.**

1. I provide assistance to students when they encounter difficulties in learning.
2. I assess learning results with my students and advise them on ways to improve their learning.
3. I provide appropriate assistance to my students if they experience difficulties in completing assignments.

**Learning assessment.**

1. I utilize a variety of assessment methods to evaluate students' learning results.
2. The assessment methods I use agree with my teaching objectives.
3. I provide students opportunities to apply what they learned.
4. I provide students with opportunities to refine concepts that they have learned.
5. I use assessment results to improve my teaching.