

Indicators of teaching effectiveness

A case study was conducted during the current academic year 2021-2022 to measure the effectiveness of trainees in teaching. It assessed the performance of the first program Completers in Qatar for 2020-2021

Only data relating to teaching effectiveness are reported, below is a description of the case study design and results.

The study measured the efficiency and satisfaction of students with their teaching effectiveness; it also assessed their complete fulfillment of the College of Education programs and employer satisfaction and the students' parents. Teaching efficiency data and interviews are documented in this analysis. The case study design and findings are listed below.

The purpose of this case study was to analyze the impact of the teacher's education system by assessing the output of completer's performances. The objective of the present case study was to investigate the impact of the teacher preparation program at the College of Education by evaluating the performance of the trainees. The study deals with the following research question on teaching effectiveness:

How completes demonstrate their willingness to apply technical expertise, skills, knowledge and provisions targeted at their preparatory program experience has been design to achieve.

Methodology

Participants

In the case study participants, include graduate teachers and their staff (administrators, vice presidents, subject co-coordinators, managers, student teacher mentors and parents. All teachers involved completed the study during 2020-2021). This year Participants in this study were female and male teachers, but the large scale were mainly female due to 95 percent of QU-CED students are female.

In this year, the sample was increased to 14 female teachers and 3 male teachers who were involved in the study while in previous years the sample was limited to females only.

In addition, two new sample were added this year, namely Early Childhood and Physical Education. The Physical Education were the first batch to graduate in academic year 2021-2022, which we were delighted had the chance to add them on to our research.

Research design

The processing of data was based on mixed-method explanatory research (Creswell & Clark 2017). Firstly, questionnaire survey was distributed to 70 public schools in Qatar, using a QU-CED system for our graduates in 2020-2021 with only 7 feedbacks were received, which we need to reflect on a new procedures which make our graduates fill in the survey .

Secondly, 14 case studies, including interviews of 14 teacher graduates and their subject coordinators as well as a teacher assessment paper and other papers such as curriculums, teaching material and student results, have been performed in relation to data. Only teacher productivity results obtained from observations and interviews are described in this section of the study.

Data Sources

Fourteen program completers' volunteers to participate in the case study conducted between second week of Feb 2022 to last week of March 2022. Each program completer serves as a case. Each case study includes the following data sources presented in the table below:

Table 1. Data sources

	Participants	Data sources	Procedures
Qualitative data with case studies	<ul style="list-style-type: none"> • Fourteen program completers working in Qatari governmental schools • School administrators • Fourteen program completers colleagues • Thirteen parents 	Observation – 1 occasions of each program completer with 2 observers each time, in total 2 sets of observation data for each completer.	Observation method in this study includes a set of data sources including lesson plans, , classroom observation, and student results) Observation data was generated second week of Feb 2022 to last week of March 2022
			Each occasion includes the following steps: <ul style="list-style-type: none"> • An informal talk with the program completer to have a brief impression of her/his work before the observation • Documents including lesson plans and other relevant materials are obtained. • Classroom observations are conducted with the evaluation sheet • Reviewers' observation notes • An informal talk communicating with the program completer concerning the feedbacks and advice on improvement
			The reviewers stressed and addressed the progress of the completion on the following occasion. In total, two observations set in order to observe the completer is performance and learning abilities for improvement.
			Interviews
			Interview with 14 school administrators
			Interview with 14 students parents
			Interview with 14 program completers

- **One occasion of classroom** observation of each program completer, each occasion includes an informal talk with the program completer to have a brief impression of her/his work before the observation and after classroom observation rating sheet, and documents including lesson plans, teaching materials and student performance. In the development of the classroom observation-rating sheet, the following steps were followed:

1. Multiple rounds of internal analysis have been undertaken by the Study Team (four team members are professional program experts). Other experts conducted expert validation who are seniors working in the programs for 10-20 years. Minor revisions were made accordingly regarding the phrasing of items including item 1, 2, 6, 8 and 9.
2. Statistical experts to determine the quality and size of the nature of the questionnaire carried out another expert evaluation. Three addressed rounds culminated in scale revision until a final agreement between the study team and experts on the current version was achieved.
3. Faculty members who did the interviews conducted translation into Arabic.
4. Pilot study was carried out by four previous program completers who worked in public schools and three professional specialists who supervisor new teachers. One word in Arabic version was revised in item 2 and item 6 each accordingly to make the expression of the items more precise.

Throughout class observations, teacher performance appraisal raters were requested, showing the degree to which she / he displayed her skill in the following respects, and using the four-point scale::

1 = “Has little knowledge about the concept/instructional practice”

2 = “Demonstrates fair knowledge and skills about the concept/instructional practice but lacks confidence in using it in class”

3 = “Demonstrates good knowledge and skills about the concept/instructional practice that allows students to use it in class”

4 = “Demonstrates wide knowledge and skill about the concept/instructional practice, and feels very confident in using it in class”

After the observation sessions, interviews with each program completers and their supervisors – subject coordinators were conducted. The pre and post observation conferences and interviews were conducted in the schools at the convenience of the participants. Each lasted 30-60 minutes. The interviews were conducted in Arabic, and audio-recorded before transcribing and translating to English for content analysis (Kvale & Brinkmann, 2009).

Informal Pre- and post-classroom observation conference talk guidelines were as follows:

Pre-observation Conference:

1. How do you feel about the teaching job in general?
2. How do you prepare for lesson plans usually?
3. What might be some strategies you have used before that were effective?
4. How might your actions enhance student learning?
5. What are you hoping to accomplish with this lesson?
6. What might you see that will let you know you have reached your goal?

Informal Post-observation Conference: Reflecting Conservation

1. How do you think the lesson went? How did you feel?
2. How do you compare the lesson you planned and the lesson you taught?
3. What are some of the things you did to make it go so well?

4. Which of your skills seemed most useful?
5. What learning(s) do you want to take with you to future lessons?
6. The reviewers provide feedbacks and advices for improvement.

Data analysis

Quantitative data analysis was based on computed descriptive statistics in order to analyze the responses of the panelists. We computed means and standard deviations for each item of the questionnaires and observation-rating sheet.

For the qualitative data, an inductive content analysis technique was conducted to reveal individual responses by defining patterns of communication and inferring meanings via linguistic features in the given contexts (Cohen, Manion, & Morrison, 2013). Through thematic analysis focusing on meaning condensation, an outline of the meanings expressed by the interviewees were coded and categorized into shorter formulations (Kvale & Brinkmann, 2009). Then initial findings were used to triangulate the survey results and further explore participants' elaboration of patterns (Kvale & Brinkmann, 2009). In the process of analysis, the interpretation did not only reply on the described events as facts, but more importantly participants' social discourse that lies behind their words were taken into the consideration of interpretation and patterns identification (Cohen, Manion, & Morrison, 2013).

Quantitative Results

Demographic segmentation:

Case Number	sex	specialty
Case 1	F	Math
Case2	F	Islamic
Case3	F	Arabic
Case4	M	PE
Case5	F	Social Studies
Case6	F	English
Case7	M	Islamic
Case 8	F	Arabic
Case 9	F	Arabic
Case 10	F	Science
Case11	F	PE
Case12	F	Early childhood
Case 13	F	Islamic
Case14	M	Social Studies

The mean and standard deviation were calculated for each item by each observer. The mean is interpreted based on the following criteria

Reliability of Class Observation Sheet:

Since the class room observation sheet used by two observers, the inter-rater reliability tests was used to ensure the reliability of this observation sheet. The output results of the inter-rater reliability test presented in the tables below:

Table 1. Correlation coefficient among observers:

Inter-Item Correlation Matrix

	Observer1	Observer2
Opserver1	1.000	.579
Opserver2	.579	1.000

The significant correlation coefficient between observer 1 and observer 2 was 0.579, suggesting a high level of correlation.

From table 5 below, the value of Cronbach's Alpha was 0.731 indicating an acceptable level of reliability.

Table 2. Reliability test:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	# observers
0.717	0.731	2

Table 3. Intraclass Correlation Coefficient:

Intraclass Correlation Coefficient

	Intraclass Correlation ^b	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.559 ^a	.063	.833	3.534	13	13	.015
Average Measures	.717 ^c	.119	.909	3.534	13	13	.015

Based on the value of the average measures in table 3, the **Intraclass Correlation Coefficient** was 0.717, which is considered as a good level of reliability.

Quantitative results:

The mean and standard deviation were calculated for each item by each observer.

The mean is interpreted based on the following criteria:

Table 4: Criteria for interpreting the mean based on the survey scale and responses:

Mean range	interpretation
1.00 - 1.74	Has little knowledge about the concept/instructional practice
1.75 - 2.49	Demonstrates fair knowledge and skills about the concept/instructional practice but lacks confidence in using it in class”
2.50- 3.24	Demonstrates good knowledge and skills about the concept/instructional practice that allows students to use it in class”
3.25 - 4.00	Demonstrates wide knowledge and skill about the concept/instructional practice, and feels very confident in using it in class”

Based on the 14 observed cases by two observers, the mean for each item was calculated for each observer and for all.

Table 5. Mean and Standard Deviation for each Item of each Observer and for all.

Item	Observer1		Observer 2		Total	
	Mean	SD	Mean	SD	Mean	SD
1. The teacher was able to provide a variety of opportunities that support student learning and development.	3.57	0.65	3.50	0.65	3.54	0.64
2. The teacher was able to use knowledge of school, family, cultural and community factors that influence the quality of education for all students.	3.43	0.76	3.31	0.48	3.37	0.63
3. The teacher was able to establish a classroom environment of respect and support that provides a culture for learning.	3.79	0.43	3.71	0.61	3.75	0.52
4. The teacher had sufficient content of my professional field.	3.71	0.47	3.57	0.65	3.64	0.56
5. The teacher was able to motivate learners and engage them in critical thinking by teaching a variety of perspectives and concepts.	3.07	0.62	3.21	0.70	3.14	0.65

Item	Observer1		Observer 2		Total	
	Mean	SD	Mean	SD	Mean	SD
6. The teacher was able to engage in assessment activities and use the data for instructional decision making and student improvement.	3.29	0.73	3.29	0.73	3.29	0.71
7. The teacher was able to plan integrated and coherent instruction to meet the learning needs of all students.	3.71	0.47	3.57	0.51	3.64	0.49
8. The teacher was able to provide student-centered instruction that is characterized by clarity, variety, and flexibility.	3.43	0.76	3.21	0.80	3.32	0.77
Overall	3.63	0.44	3.64	0.58	3.63	0.46

From table 5, it was found that, the mean for each items is greater than 3.25. Based on criteria in table 4, we can conclude that the 14 cases (participants) in the case study demonstrate good knowledge and skills about the concept/instructional practice that allows them to use it in class.

Results by Male and Female:

Table 6. Mann-Whitney test results:

Gender	N	Median	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Sig
Male	6	3.69	15.92	95.5	57.500	-0.480	0.643
Female	22	3.56	14.11	310.5			

From table (6). There are no significant differences between the mean rank of male and female students on the teaching effectiveness (mean rank for male= 15.92 and the mean rank of the female=14.11) With $U=57.50$, $Z= -0.480$ and $p\text{-value}=0.643$.

Qualitative Data Results:

Multiple sources of qualitative data were generated in the fourteen case studies, including fourteen interviews with the program completers, fourteen interviews with their supervisors, fourteen interviews with their students' parents, pre and post informal observation conferences, and documents review of lesson plans, teaching materials and student performance. Outcomes of the cross-cases integrating multiple sources of data are reported following the following structure: firstly, overall evaluation of the program completers regarding their professional knowledge, teaching skills and professional dispositions; secondly, the link between teaching performance and teacher preparation program; thirdly missing points from teacher preparation program; fourthly teaching learning through work.

1. Overall evaluation of the program completers regarding their professional knowledge, teaching skills and professional dispositions:

All the fourteen program completers have confidently self-evaluated their readiness for working as a teacher in the aspects of professional knowledge, teaching skills and professional dispositions. Their supervisors provided evaluation that is even more positive, as they commented on the completers respectively:

Supervisor of Case 5: *“she is a collaborator teacher, who loves to help her colleagues, takes the remarks into account. She is good in using of technology means and she has the ability to prepare lessons plans perfectly and efficiency.”*

Supervisor of Case 6: *“I am very satisfied because she is doing her best, she wants to learn more and she is improving every day. Her performance so far have been good. “*

Supervisor of Case 10: *“She is an excellent teacher and what I saw from her during this period was very satisfactory, She is excellent and tried to hire girls and activate their role in the quota. It is the most important thing that it communicates the idea of the project and we saw and understood the students' work.”*

Supervisor of Case 12: *“Noura has a motivation for learning, research and renewal always. She has new ideas and contains children and close to them. She is a specific teacher and comes down to the level of the child. One of her most important achievements prepared and changed the classroom environment for the benefit of the child. She brought electronic means that shorten time and effort, her level is close to a school with 7 years' experience.”*

Teacher of Case 6: *“My rating is good and I achieved added value in first grade 4.4 and in second grade 4.3. I love other than the pattern of mathematics education. I like to hire what I learned at the faculty of education.”*

Teacher of Case 9: *“Excellent. My experience will improve with the passage of time.*

This is evident from the students' high scores on tests and the weekly evaluations.”

Teacher of Case 10: *“I currently hold a very good self and the school supported me to development my skills.”*

Teacher of Case 12: *“Graduation with excellence gave me confidence in myself, I have a knowledge of strategies, teaching methods, how to dialogue and develop questions for the child. Using sensors in teaching children, I have a cognitive amount that qualifies me to be a distinguished teacher with comprehensive teaching skills. I am able to communicate information and use educational methods to attract children. ”*

The students' parents provided evaluation that is even more positive, as they commented on the completers respectively:

Parent of Case1: *"wonderful and excellent"*

"A very helpful teacher who simplifies and delivering the materials effectively to the students."

"I thank her (the teacher) with all my heart for the great efforts she made to help my son boost his academic performance despite the circumstances we are going through."

"They are role models to be followed, who are keen to build an educated and conscious generation. All thanks and appreciation to them. "

"The teacher added value in improving the students' tests scores in her three classrooms comparing the mid- and final-term exam results."

Parent of Case 5: *"The teacher Knowing the basics of teaching and having the skills of the teacher as if she had previous experience, she simplifies the information for the student and makes them copy the information more than once so as to save it. You overtake graduates from other universities"*

Parent of Case 6: *"My son appraises the teacher and he is capable of understanding the lesson easily. "*

Parent of Case 9: *"A very good teacher who has the desire to develop. She only needs to give clear instructions to students to ensure that they tackle the tasks confidently."*

"The teacher is and affectionate. She loves her students so much, and she can deliver information well. "

"My daughter has participated in the 'Little Narrator' competition.

"My daughter's academic achievement has increased. All thanks and appreciation to Ms. Eiman (the teacher)."

2. Evaluate the teacher's current performance at work regarding making academic and learning gains with the students. Their supervisors provided evaluation that is even more positive, as they commented on the completers respectively:

Case 6: *"Yes, they prepared me so well to what I am facing. It was really helpful and I really enjoyed it."*

Parent of Case 1: *"A hear-working teacher who keens to improve her professional skills and presents the assigned work accurately and on time."*

"A top-ranking student teacher. We hope she presents new ideas, innovative teaching proposals, and professional development workshops that improves coordinator and teachers' teaching skills. "

Supervisor of Case 7: *"Indeed, teacher 'Mohammed' is one of the outstanding teachers in the school. He is a hard worker who has excellent teaching skills than some senior teachers. He likes constantly improve himself and follow up-to-date effective teaching materials and strategies relevant to the professional. "*

3. Link between teaching performance and teacher preparation program

The program completers interviewed were generally pleased with the lessons learned from their teacher training program and could relate the benefits of the program to their regular teaching practice. The key

benefits of the curriculum include ideas which have helped to explain teaching and learning, a broad variety of teaching methods and skills for teaching and microteaching. As they expressed:

(Case1) “.Linking what I learned at the university teaching methods 1 and 2 now the teacher preparation program has influenced the use of strategies and class management and how I deal with the student from the psychological side. I would like to say that the job is not what I studied at the university. ”

(Case 9):“Through the application of the pedagogical knowledge/skills learned during the teacher preparation program such as lesson planning and preparation besides PowerPoint presentations. The teacher preparation program helps me in planning, preparing, and organizing the steps for effective lessons. ”

(Case 5): “Benefited from study and field training by 50% but practice and daily work earned her increased experience. The university prepared it properly, recommends increasing the hours of field training, reducing the duties and focusing on practice”.

(Case6): “It’s different, what we learned in the university compared to what I am teaching now in class. Most of the content is knowledge but not how to interact with the children.”

(Case 10): “The field was a paradigm shift from study and our body and it was a micro-training, but the real job is lost. The most important Wally in the field actually linked me to the strategies used and electronic programs and interest in presentations. Students rely more on themselves to prepare lessons in the field because only they take help from the associate teacher but their productivity alone misleads their development more. ”

(Case 12): “Qatar University founded Noura as a teacher with self-confidence and ability to communicate information. Some subjects limit teachers such as English subjects and teaching in kindergartens is in Arabic. In field training the teachers at the school learned from them technologically. ”

4_ Similarly, all interviewed supervisors and students’ parents also attribute the satisfied performance of the program completers to the effectiveness of the teacher preparation program. In particular, the supervisors and parents compared teachers graduated from College of Education, Qatar University and teachers from other backgrounds, as cited by them,

Qatar University graduates are flexible, educable and acceptable to evolution and change better than graduates from other universities and they are better able to develop the subject to take it on the ground. (Supervisor of Case 10)

The field was a paradigm shift from study and our body and it was a micro-training, but the real job is lost. The most important Wally in the field actually linked me to the strategies used and electronic programs and interest in presentations .(Case 10)

I can’t compare because it’s individual cases so I can’t say anything. (Supervisor of Case 6)

We are graduates of Qatar University and politics have changed. Unlike Qatar University is one of the best universities as learning graduates, but because of the changes and in line with the labour market, there must be another look to intensify the specialized scientific material for students in the fields of the Ministry's curriculum. The graduate levels of Qatar University-Faculty of Education vary according to specialization. (Case 6)

Undoubtedly, Qatar University graduates are recognized among the outstanding graduates due to the distinctive excellence the university provides in teaching. Actually, Mohammed has his distinctive touches in preparing PowerPoint slides and stimulating programs. He also presents a computation workshop that has significant effects on the department.

Mohammed is an outstanding teacher. He possesses developed computational skills and likes to develop his profession. He is positive, collaborator who being engaged at work rapidly. His colleagues in the department and administration section respect him. (Supervisor of Case 7).

Always distinguished and high-qualified teaching skills .(Parent of Case 6)

There is, indeed, considerable differences between Qatar university graduates and others. Outstanding graduates who love their students. (Parent of Case 9)

3. Missing points from teacher preparation program

Interviewed program completers and supervisors identified two major missing points from their teaching preparation program. One completer mentioned the confidence in professional knowledge and skills she said;

(Case 5): “We were well prepared at Qatar University theoretically, but when we moved to practice in practical education we were overwhelmed with theoretical duties at the expense of the practical side, I hope all field training is only a practical aspect”.

(Case12) “Benefited from study and field training by 50% but practice and daily work earned her increased experience. The university prepared it properly, recommends increasing the hours of field training, reducing the duties and focusing on practice”.

(Supervisor of Case 6 : “It is too early to decide. We cannot judge anything before the end of the semester. However, she knows how to motivate student.”

In reaction to the missing aspect, completers mentioned that there is a need to have practical training since the first school year and not leave for the last semester in the fourth year. This aspect was also mentioned in the interviews with the supervisors who mentioned that the program completers they need more training in schools before graduating.

Student Results:

Completers' students result compare to other teachers

Completers case No			Completer students' result				Other teacher students' result	
Case 1	Class section	Value added in academic achievement among evaluations	Mid-term Academic Achievement Ratio	Mid-Class Pass Rate	Final Academic Achievement Ratio	Final Class Pass Rate	Mid-term Academic Achievement Ratio	Mid-Class Pass Rate
	7/4	%4.4	%81.0	100%	%85.4	%100	%97.2	%100
	7/5	%0.7	%82.9	%96.1	%83.6	%100	%98.2	%100
	7/6	%0.3	%73.6	%87.5	%73.9	%85.4	%94.1	%100
Case5	Class Section		Mid-term Academic Achievement Ratio		Mid-Class Pass Rate		Mid-term Academic Achievement Ratio	Mid-Class Pass Rate
	5A		-		-		%84	%100
	5B		-		-		%87	%100
	5C		-		-		%89	%100
	5D		-		-		%89	%100
	5E		-		-		%92	%100

We had a problem collecting the results of students' achievement in schools. At the outset, the teachers did not respond to our demand for fear of their principals. On the other hand, two teachers responded to us and sent their students' grades but they are insufficient and do not meet the purpose of studying. We still have a problem compiling data because the school community does not respond.

The students' results were collected for teachers in case no. 1, case no. 5, in order to gain additional data about graduates of the Qatar University Education Program, student results were analyzed and compared to those of students in other subjects. The results of this analysis indicated that averages for the student outcome for Qatar university graduates shows that graduates of Qatar University possess high levels of competence in some classes and less on other. The high achievement rates for teachers of graduates of Qatar University are explained by the good preparation they had during the period of study at the university. In conclusion, qualitative figures showed that the efficiency of the teaching and its effect on learning benefits from a range of evidence given by the completers and their supervisors. This also shows variation in how teachers perceive student learning outcomes, efficacy and importance.

Limitations and difficulties of the case study

While the case study provided evidence for program impact through the perspectives of program completers, employers and observation of their practices, the results remain provisional due to a few limitations and difficulties as follow:

- 1- A larger population of participants may provide more variation of the practices.
- 2- Some school principals do not allow observers from the university to attend directly the class although they have a permit from the Ministry of Education and Higher Education.
- 3- Due to the spread of the coronavirus, the research team was unable to complete the task of collecting data easily.
- 4- The goal was to start collecting data in January and eventually the data was collected as planned and satisfactorily .Some supervisors refused to do oral interviews and wrote the interviews answers on papers
- 5- There is difficulty in unloading interviews into written text and then translating them into English because of the lack of a specialized team
- 6- Teachers fear the school administration will pass us the results of their students' achievement, despite all the efforts made and after sending official emails to school principals we were only able to reach the results of four teachers.
- 7- In terms of interviews, it did not meet the required purpose and there was no good response from interviewees, some of whom simply answered one word to the question.
- 8- Few feedbacks on the online survey that was sent to the graduate teacher, supervisors and mentors.