Indicators of teaching effectiveness

A case study was conducted during the current academic year 2019-2020 to measure the effectiveness of trainees in teaching. It assessed the performance of the first program Completers in Qatar for 2018-19.

Here, 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. Only teaching efficiency data 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 2018-201 9). All participants in this study were women, mainly because 95 percent of QU-CED students are women, and we only traced women's jobs.

Research design

The processing of data was based on mixed-method explanatory research (Creswell & Clark 2017). The questionnaire survey was first distributed to 70 public schools in Qatar, using a QU-CED system from 2018-2019. There have been two stages and data sources. Secondly, nine case studies, including interviews of nine 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

Nine program completers volunteers to participate in the case study conducted between first week of January 2020 to first week of March 2020. 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	 Nine program completers working in Qatari governmental schools School administrators Six program completers colleagues Nine parents 	Observation – 2 occasions of each program completer with 2 observers each time, in total 4 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 first week of January 2020 to first week of March 2020 Each occasion includes the following steps: • 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
		Interviews	The reviewers stressed and addressed the progress of the completion on the following occasion. In total, tow rounds of the reflection for improvement are included in the observation set in order to observe the completer's performance and learning abilities for improvement.
		Interviews	Interview with9 school administrators Interview with9 students parents
			Interview with 9program completers

- One -two occasions 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

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

The mean is interpreted based on the following criteria:

Table 1: 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
	Demonstrates fair knowledge and skills about the concept/instructional practice but
1.75 - 2.49	lacks confidence in using it in class"
	Demonstrates good knowledge and skills about the concept/instructional practice that
2.50- 3.24	allows students to use it in class"
	Demonstrates wide knowledge and skill about the concept/instructional practice, and
3.25 - 4.00	feels very confident in using it in class"

Based on the nine (9) observed cases by two observers in 2 occasions, the mean for each item was calculated for each observer.

Table 2. Mean and Standard Deviation for each Item of each Observer.

Item		Observer1		Observer 2	
		SD	Mean	SD	
1. The teacher was able to provide a variety of opportunities that support student learning and development.	3.79	0.43	3.77	0.44	
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	0.51	3.54	0.52	
3. The teacher was able to establish a classroom environment of respect and support that provides a culture for learning.	4.00	0.00	4.00	0.00	
4. The teacher had sufficient content of my professional field.	3.86	0.36	3.85	0.38	
5. The teacher was able to motivate learners and engage them in critical thinking by teaching a variety of perspectives and concepts.	3.50	0.52	3.46	0.52	

Item		Observer1		Observer 2	
		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	0.83	3.38	0.87	
7. The teacher was able to plan integrated and coherent instruction to meet the learning needs of all students.	3.79	0.43	3.85	0.38	
8. The teacher was able to provide student-centered instruction that is characterized by clarity, variety, and flexibility.		0.47	3.69	0.48	
Overall	3.67	0.22	3.69	0.26	

Table 3. Overall Mean and standard deviation for each items regardless of observers .

Items	Mean	SD
1. The teacher was able to provide a variety of opportunities that support student	3.78	0.424
learning and development.		
2. The teacher was able to use knowledge of school, family, cultural and community	3.48	0.509
factors that influence the quality of education for all students.		
3.The teacher was able to establish a classroom environment of respect and support	4.00	0.000
that provides a culture for learning.		
4. The teacher had sufficient content of my professional field.	3.85	0.362
5. The teacher was able to metionte learners and appear them in suitical thinking by	2.10	0.700
5. The teacher was able to motivate learners and engage them in critical thinking by	3.48	0.509
teaching a variety of perspectives and concepts.		
6. The teacher was able to engage in assessment activities and use the data for	3.33	0.832
instructional decision making and student improvement.		
7. The teacher was able to plan integrated and coherent instruction to meet the learning	3.81	0.396
needs of all students.		
8. The teacher was able to provide student-centered instruction that is characterized by	3.70	0.465
clarity, variety, and flexibility.		
Overall	3.681	0.2360

From table 2 and table 3, it was found that, the mean for each items is greater than 3.25. Based on criteria in table 1, we can conclude that the nine cases (participants) in the case study demonstrate good knowledge and skills about the concept/instructional practice that allows them to use it in class.

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 inter-rater reliability tests presented in the tables below:

Table 4. Correlation coefficient between 2 observers

Inter-Item Correlation Matrix

	Observer1 Observe			
Observer1	1.000	.839		
Observer2	.839	1.000		

The significant correlation coefficient between observer 1 and observer 2 was 0.839, suggesting a high level of correlation.

From table 5 below, the value of Cronbach's Alpha was 0.907 indicating excellent level of reliability. Table 5. Reliability test

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.907	.913	2

Table 6. Intraclass Correlation Coefficient

Intraclass Correlation Coefficient

	Intraclass Correlation	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.839	.534	.951	10.723	11	11	.000
Average Measures	.912	.696	.975	10.723	11	11	.000

Based on the value of the average measures in table 6, the **Intraclass Correlation Coefficient** was 0.912, which considered as an excellent level of reliability.

Qualitative data results

Multiple sources of qualitative data were generated in the nine case studies, including nine interviews with the program completers, nine interviews with their supervisors, nine 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 nine 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:1 "The teacher is distinguished, the evidence is its performance in the class, and the interaction of female students with it, and the high level of achievements of students, especially compared to other teachers. The teacher is proficient in the scientific advocacy and strategies. Whoever sees this parameter says that she has ten years' experience and not one-year experience."

Supervisor of Case 2: "The teacher accepts career guidance in order to develop and continue, therefore, in order to provide a better educational level for her students."

Supervisor of Case 3: "the teacher works hard and she loves her job. She accepts all the comments and suggestions, and take them seriously to improve her teaching skills and strategies. I am very happy of her performance, I like the idea that Qatar university-college of education programs prepares students according to different level (secondary, primary), because it enables them to deal with each level. I cannot see any difference between graduate from Qatar University and other universities. One more thing I would like to add, that I wish their preparation program to concentrate on the content matter.

Supervisor of Case 4: "She is a new teacher and it is accepted that the new teacher is not granted by the administration an appreciation for excellence, but the teacher is excellent in terms of scientific material and relations with female students and cooperation with the administration, she is a new teacher and her curriculum has been changed for the second semester, however she has overcome all these obstacles."

Supervisor of Case 5: "I am very happy of her performance. She is well prepared in knowledge and content and very good in teaching skills and strategies. Miss Hassan very collaborate teacher, she doesn't hesitate to help her colleague."

Supervisor of Case 6: "God bless her, the teacher has come to our school us with a lot of knowledge and strategies and she has a passion for self-learning and does not depend on the coordinator

Supervisor of Case 8: "the trainee teacher is quick to learn and develop, characterized by her response to the directions and the criticism revealed to her, she has many previous skills, and it is expected that she will cry better and better."

The program completers interviewed generally have assessed their preparation to work as a teacher of professional skills and professional arrangements with trust, as they commented on their self respectively:

Teacher – Case 1: "My evaluation of practical evidence from the professional aspects in terms of preparing for the lesson plan, strategies and competencies has been well prepared and I have not encountered any difficulties."

Teacher – Case 2: "The level of students has been raised academically, and diversity has been presented in the strategies that may facilitate the student's scientific content, as well as the promotion of female students and the activation of the weekly star for them, which contributes to the adjustment of the students' level."

Teacher – Case 3: "I think of my performance as excellent based on my mentor opinion .Also, my relation with my students is great .I always try to apply new strategies in my teachings. I had an outstanding preparation program at the university especially the internship that provided me the means of teaching

skills such as preparing lesson plan, classroom management. I wish I had more courses of the content matter."

Teacher – Case 4: "I evaluate my performance exceed expectation, I have been prepared very well at University, and after joining the job I attend many workshops, I work very hard to improve my skills. I believe the too many assignment in the internship prevent us from concentrating on teaching in our internship program."

Teacher – Case 5: "Certainly, he played field training in my preparations as a teacher, but it was almost incomplete due to the short period of time because teaching is a practice, and this affected me in mastering the scientific subject."

Teacher – Case 6: "I thank Qatar University for its support and everything that we benefited from was thanks to the professors at the university and the materials that we studied were very useful, and we acquired various skills during the study, such as class management and through the scientific subjects that we studied."

Teacher – Case 8: "I evaluate my performance as very good in terms of taking into account individual educational differences between my students, strategies and teaching methods, but I need to develop myself more in terms of taking into account individual differences and students' learning styles, and I continuously promote the use of technology in teaching."

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

Student's Parent – Case 1: "She is a teacher who is familiar with all aspects of her profession. She is an excellent student who knows the psychology of students, raises their morale and psychology, and she loves female students in the academic subject. She loves students herself, and this makes students love the teacher. She is a superior teacher."

Student's Parent – Case 2: "The completer from the College of Education is good, my daughter got high grade and she loves her class. According to her teaching skills I can't say anything, I don't know."

Student's Parent – Case 3: "The completer from the College of Education is good, my daughter got high grade and she loves her class. According to her teaching skills I can't say anything,I don't know.

Student's Parent – Case 4: "I thank the teacher for being distinguished and her way of giving lessons is clear and her methods are interesting in teaching, and this was reflected in my daughter's academic performances."

Student's Parent – Case 5: "I am very satisfied of the teacher's performance. My daughter got high grade. This teacher highly skilled and she explain the lesson very well"

Student's Parent – Case 6: "I see that my daughter is much better than last years and my daughter now does not need any follow-up at home for social studies. This is evidence that the teacher has a high level and can achieve high results with female students. Without the high teacher level, my daughter's performance was high."

Student's Parent – Case 8: "A completer from the College of Education ensure to focus on the students 'understanding of the lesson, and the use of a variety of material in teaching mathematics, and making sure to correct the students' answers on the textbook and the enhance applying variety of teaching methods and choose the appropriate method, in addition students respect and love her."

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:

Supervisor of Case:1 "I would say that the level of her students in the subject of social studies is one of the highest grades she has compared with her overwhelming of teachers and on the level of scientific research, she has now qualified at the state level and last year she took second place in the astronomy competition."

Supervisor of Case 2: "The teacher is able to achieve the desired goals of the educational process, and this remains with her in dealing with colleagues in developing herself as well as through her students, where she created the spirit of the room and communication and the love of learning with them as she raised the level of performance of the students and the nature of this through the results of the students at the end of the first semester."

Supervisor of Case 3: "The achievement rate for her students is high, and a small number of students have a low achievement rate."

Supervisor of Case 4: ". With regard to the teacher, the success and achievement rate is high compared to the results of the first semester. Generally, the parameter was evaluated through the Ministry's guidance supervisor and she was excellent."

Supervisor of Case 5: "The achievement rate for her students is high, and students love and respect her."

Supervisor of Case 6: "There is a lot of evidence for the performance of the teacher, through my attendance of classes for it, it gives excellent scientific material, the applications of students, their level is high, and the response of students is excellent."

Supervisor of Case 8: "The achievement rate for her students is high, and a small number of students have a low achievement rate (not a failure), and the pass rate for her students is 100%."

Evaluate the teacher's current performance at work regarding making academic and learning gains with the students.

The completers' evaluation of themselves was also positive. Completers' comments follow:

Teacher - Case:1 "I would say that the level of her students in the subject of social studies is one of the highest grades she has compared with her overwhelming of teachers and on the level of scientific research, she has now qualified at the state level and last year she took second place in the astronomy competition."

Teacher - Case 2: "As for the performance of my students compared to the past two years, their level is very high now and their grades are very high."

Teacher - Case 3: "My students' academic achievement is high. This is due to the effective use of technology, which encouraged other teachers in the school to use technology."

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Teacher - Case 4: "I motivate my students, study them with love, and stimulate the students' motivation. I found this with my students at the beginning. Their motivation was low, and then their motivation increased through encouragement".

Teacher - Case 5: "My students' academic achievement is very high. This is due to the effective use of new strategies and technology, which encouraged other teachers in the school to use technology. I also attend competition such as (holy Quran recite)".

Teacher - Case 6: "There are poorly performing students who were given remedial lessons and worksheets, and their grades increased significantly."

Teacher - Case 8: "My students' academic achievement is very high and their average achievement is 97% for one of the classes. In addition, for other class is 95%. Moreover, there is no failure. This is due to the effective use of technology, which encouraged other teachers in the school to use technology. Female students are motivated to use technology and learn."

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)The education program at Qatar University prepares me well how to prepare study plans and became familiar with how to formulate measurable goals and good teaching strategies, but what was lacking me through the number of teachers program is how to formulate questions

(Case 2) "The current performance has been linked to practical education by employing strategies in the right place and formulating goals correctly Speech to motivate and enhance female students and work to raise the level of female students in the classroom so that they are superior female students."

(Case3) "At the beginning, I faced some difficulty according to work priority perspective such as grading the students. I feel that I need to learn more about teaching skills. I wish I had more courses of the content matter. Internship Program helps me to get use to the school daily activities, it also develop the use of technology and effective strategies."

(Case 4) "The field training had a great role in my position on the right path in teaching, the class notes helped me on how to deal with students and self-interactions helped me to understand my students and I hope that the field training period will be longer."

(Case 5) "It prepared me in a good way, I learn about students' characteristics, how to deal with adolescence. I learn classroom management, using technology. Internship helped me to develop my skills".

(Case 6) "The scientific education program has a great role in preparing us and how to face school problems, especially school administration. Practical education is a measure to be teachers or not to be."

(Case 8) "It changed my perception of teaching, Instead of traditional teaching, I was encouraged by the use of technology and the use of effective strategies, and the field training (Internship) program helped me develop myself.

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,

"I do not find differences between the female graduates of Qatar University and the graduates of other universities, but I can say in general that the graduates from the College of Education at Qatar University are good." (Supervisor of Case 1)

"Outstanding teachers and their level is high, and this was shown by the results of the students." (Student parent of Case 1)

"All thanks and appreciation to the University of Qatar and the College of Education for its distinguished and qualified personnel. There is specificity in some disciplines, such as Arabic, for whom a teacher must be specialized in" (Supervisor of Case 2)

"The College of Education graduates are very good; I think they are the same like other teachers from different universities" (Student parent of case 3)

"I like the idea that Qatar university-college of education programs prepares students according to different levels (secondary, primary...), because it enables them to deal with each level. I cannot see any difference between graduates from Qatar University and other universities. One more thing I would like to add, that I wish their preparation program to concentrate on the content matter" (Supervisor of Case3)

"Qatar University graduates are able to plan lessons, scientific material, use of computers and activate electronic programs. I am completely satisfied with Qatar University graduates" (Supervisor of Case4)

"According to the coordinator's point of view, the level of Qatar University graduates is vary depending on the student itself. The completers from the College of Education at Qatar University is distinguished with the development and use of technology in education effectively, but they need to work on the content." (Supervisor of Case5)

"The College of Education graduates are highly skilled and they enhance the use of technology." (Student parent of Case5)

"Qatar University graduates now have modern strategies and are better than those of other universities" (Student parent of case 6)

"There are good female graduates and there are weak women, but Qatar University outputs are good and high "(Supervisor of Case 6)

"According to the coordinator's point of view, there is a a similarity and parity in the level between it and the female graduates of the "Teach for Qatar", but "Teach for Qatar" completers is more interesting and uses more references other than textbook. A program

completer from the College of Education is distinguished with the development and use of technology in education effectively, and promotes pair and group work activities" (Supervisor of Case 8)

"The College of Education is the foundation for education and the preparation of a generation of female teachers. Mathematics teachers are generally considered good teacher in school. But the completer considered better compared to other teacher such as English teacher. The graduate of the College of Education is considered close to the students, and she enhance the use of technology." (Student parent of Case 8)

3. Missing points from teacher preparation program

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

"The teachers should work more on the scientific subject and the school's coordinators are working hard to help the new teachers expand on the scientific subject. The social curricula are shallow curricula and the teacher needs a broad knowledge in order to enrich the subject." (Case 4)

Another program completer mentioned her lack of professional knowledge and academic subject:

The field-training period is short. Training is an exercise to acquire teaching skills. Emphasis has been placed on using strategies and neglecting the academic side and the academic subject "(case 4)

Another program completer mentioned her lack of preparation for test questions:

"The practical education program is separate from reality. I faced the problem of preparing tests at the beginning of the work. I was completely ignorant of it, whether how to formulate questions for the middle test or the final and final test, as well as the way to formulate the open or uncovered question." (Case 1)

In reaction to the missing aspect, completers mentioned their continuing learning based on issues from real life problem; this aspect was also mentioned in the interviews with the supervisors who mentioned that the program completers they supervised showed positive attitude and willingness to learn new things in a school environment. Excitement to learn is highly appreciated as a good value by these teachers in their work place.

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- Further validation of the developed tools is needed in the future.
- 3- Some school principals do not allow the observers from the university to attend directly the class although they have a permit from the Ministry of Education and Higher Education.

- 4- Because of the spread of the Coruna virus, the team did not complete the data collection as planned and was satisfied with the data already collected.
- 5- Some supervisors refused to do oral interviews and wrote the interviews answers on papers
- 6- Despite the limited time and burden for faculty members who made the observations and interviews, they also translated the interviews into the English language.
- 7- The teachers fear of the school's administration, to pass for us the results of their students' achievement.