



THE DEGREE TO WHICH SCIENCE TEACHERS WHO WON THE QUEEN RANIA OF JORDAN AWARD FOR DISTINGUISHED TEACHER ACHIEVE THE STANDARDS OF EDUCATIONAL EXCELLENCE AND CREATIVITY

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Abstract. The study aimed to reveal the degree to which the teachers who won the Queen Rania of Jordan Award for Distinguished Teacher achieved the standards of excellence in light of the standards approved by the award. The study adopted an analytical descriptive approach, and the sample consisted of all the teachers who won the Queen Rania of Jordan Award for Distinguished Teacher from 2013 to 2021, numbered 180 male and female teachers. To achieve the objectives, the performance evaluation tool adopted in the award was used, including specific criteria, and each criterion had several indicators, as its validity and reliability were verified before being officially approved by the Association of Queen Rania Award for Excellence in Education. The results of the analysis of the excellence standards among the sample members showed that the degree of their achievement to the standards in general was moderate, and the results also showed that there were statistically significant differences at the level $\alpha = 0.05$ between the arithmetic means of the achievement degrees of standards of excellence among science teachers who won the Queen Rania of Jordan Award for Distinguished Teacher due to specialization and in favour of science teachers who won the award, while the results showed that there were no statistically significant differences due to gender.

Keywords: creativity, degree of achievement, excellence standards, Jordan, Queen Rania of Jordan Award for Distinguished Teacher, winning science teachers.

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1. Introduction

With the beginning of the 21st century, the world started to seek in various fields development and renewal and cause the required changes to adapt with the increasing requirements and changes; the most prominent aspects of this change in the educational field are represented in the development school curricula, programs of teacher preparation and qualification, and the necessity to employ technology in education. As the years progressed, the essential requirements of education development increased, as one of its most prominent was the digitization of education and shifting to distance education to face the emergency conditions like the coronavirus 2 caused COVID-19 pandemic that swept the world in 2019, and because of it, the educational institutions were closed, and the world was forced to shift to distance learning to ensure the continuity of education for generations (Levander et al., 2020).

Education is considered as a basic element and the cornerstone in the development and progress of societies, and it plays a critical role in achieving sustainable development at various levels, starting with providing equal opportunities for all to obtain a qualitative education

and providing youth with the essential knowledge and skills to keep pace with international developments and participate in building a better future. In most countries, including Jordan, the educational system seeks to provide an educational environment that encourages critical and creative thinking among students (Forsberg et al., 2022; Hamilton, 2019).

The educational institutions play a major role in providing the proper infrastructure, directing investments towards the educational sector, reinforcing the teacher's role, and developing their teaching skills through implementing various training programs for them. Among the recent requirements occurred to educational systems are imposing new roles on teachers requiring concentration on the student's role and his responsibilities in education in the light of the current developments and the 21st century challenges representing in various sides such as the proliferation of knowledge in terms of quantity and the change in quality and organization by creating new branches of knowledge, emergence of new various teaching strategies and methods, tremendous progress in technology, emergence of new generations in means of communication and to provide individuals various thinking skills in addition to the scientific skills and information, and understand all realities, hypothesis, inventions and discoveries occurred in the world (Maryani et al., 2023), as this will be achieved during their study in the various stages of education of science curricula including concepts, contents, and various scientific attitudes (Fatimawati Adi Badiozaman & Segar, 2022; Almomani et al., 2020; Alnasraween et al., 2020).

In order to achieve the qualitative outputs to keep pace with scientific and technological developments of all curricula in general and the science curricula in particular, it was essential to prepare and develop teachers to enable them to achieve the effective teaching to their students through employment of modern teaching strategies and methods in addition to integrate technology in teaching process. In order to encourage them to do this, it was necessary to give them incentives whether they are material or moral representing in certificates of appreciation and improving teachers' academic ranks. To achieve this, what is known as educational excellence awards in performance appeared in various Arab and international countries, and examples for this Hamdan bin Rashid Al Maktoum educational awards in the United Arab Emirates (UAE), which are considered the oldest continuous Arab educational awards to date that were launched in 1998, and they were based on real excellence standards to evaluate the job performance of teachers during their achievements in the last three years. These awards have expended in 2009 and included the UAE and Arab world, as it is given every two years to three winners from all over the world (Balfaqih, 2009; Alatram, 2016).

There is also Khalifa Award for Education to support the educational process and innovators in the UAE and Arab world in general. In 2017, the UAE launched Mohamed bin Zayed Award for the Best Gulf Cooperation Council Teacher in order to emerge the effective performance in the best systematic image of teachers in the Arab states of the Persian Gulf, Egypt, and Jordan. The other awards are Ras Al Khaimah Awards for Educational Excellence, which are local awards targeting the distinguished teachers in the educational performance in the Emirate of Ras Al Khaimah, UAE. In Qatar, Qatar Scientific Excellence Award emerged in order to reinforce creativity and excellence among Qatari teachers to improve the educational outputs and positive attitudes towards knowledge and scientific research. As for the Saudi Arabia, Education Award for Local Excellence was launched in 2008 to encourage the

educational society groups and motivate them to be distinguished in performance in order to create a creative and generous society that contributes to achieve the country's vision of 2030 (Saudi Vision 2030, 2025), in addition to Jeddah People Award for Distinguished Teacher for those who stays in Jeddah city, Saudi Arabia, only, as it is characterized by supporting the educational projects and scientific experiments distinguished by originality.

There are other international awards for educational excellence such as Global Teacher Prize in United Kingdom, which is global award launched in 2015, as its value is estimated at 1 000 000 United States (US) dollars, which is organized by the Varkey Foundation. More than 5000 teachers participated in its first session from 127 countries around the world. One of the oldest awards to honor teachers is the Best Hometown Teacher Award in the US, which was established in 1952, through which the first hometown teacher is honored in the presence of the president of the US, and in honor of this teacher in the year of winning, s/he is exempted from giving classes to tour locally and internationally to speak about the teaching profession, in addition to attend more than 150 educational events to speak about his experience to the audience (Burma & Karim, 2021; Al-Sairra, 2012; Macfarlane, 2011).

In order to encourage teachers in Jordan in general including the science teachers to excel in performance, carry out achievements and improve educational outcomes, their Majesties King Abdullah II of Jordan and Queen Rania of Jordan launched, on the occasion of Teacher's Day on the 5 October, 2005, a lofty royal initiative represented in Queen Rania of Jordan Award for Distinguished Teacher (QRA Award), as this initiative came to develop the teacher and motivate him/her for giving and excellence, in order to contribute in building a productive and thinking society, and consolidate the role of educators in their various positions in raise a thinking and creative generation, and lead the society towards excellence. This award which is supervised by the Association of Queen Rania Award for Excellence in Education (QRA) (2025), targets all teachers in the governmental educational sector according to certain conditions, as descriptive standards and indicators were set which were designated for every standard to be corrected based on certain rules for the award and disseminated it in the educational field. The number of criteria at the beginning of the award in 2006–2013 was nine standards represented in 1) personal philosophy; 2) effectiveness of education; 3) resources management; 4) professional development; 5) shared relationships; 6) professional ethics; 7) creativity; 8) innovation; 9) evaluation, outputs, and achievements. Descriptive indicators (rubrics) were prepared for every standard expressing the level of performance in the standard. The evaluation process of the participated teachers passes through successive stages to reveal the level of the distinguished teachers' performance and their achievement degree to qualify for the final stage through which the winners are honored by providing material and moral incentives, which are defined and announced to them before (Darwish & Al-Shara, 2018; Abu-Tineh & Al Rosan, 2008).

During the last period since the beginning of the award until the current year, QRA Award has developed and demand for the award increased, as changes were developed based on feedback processes received from the field, candidates and evaluators of the award including amendment on the standards; since 2013 until 2020, the standard of resources management has been changed to the standard of learning for life. After 2020, many criteria and names have been amended to become eight standards instead of nine represented in 1) person-

al philosophy; 2) learning and teaching; 3) learning and digitalization; 4) learning for life; 5) professional development; 6) innovation and creativity; 7) community partnership; and 8) standard which is the achievements, as this required amendments of indicators leading to each standard (rubrics) to define the level of performance and determine a weight for every standard (The Queen Rania Award for Excellence in Education, 2025).

Achieving excellence in performance among teachers in the current era especially among the science teachers require them confronting challenges and difficulties that will face them in the future. To reach this, the science teachers must possess several skill, the most important of them is the digital skills in teaching science that enable them to interact positively with the quality of education imposed by the digital age in order to be able to understand the science of age and its continuous developed techniques, provide a rich educational environment with technical resources among students, the ability to direct students and communicate with them effectively inside and outside the educational position through the several education channels available for them. To encourage teachers to keep pace with the rapid and successive developments in teaching, so there must be material and moral incentives offered to them by their institutions, and this what all countries seek to ensure reaching qualified educational outputs (Almomani et al., 2020; Ucak, 2019; Mu'awwad, 2019; Al-Salamat, 2016).

Referring to the previous studies, it was found that there are several studies that investigated the teaching practices, excellence awards, and their standards in various aspects, the most prominent of these studies are the study by Fatimawati Adi Badiozaman and Segar (2022), which aimed to compare the perceptive importance of teachers' efficacies and their ability to teach online in two higher education institutions in Sarawak, Malaysia, as the study sample consisted of 156 teachers. To achieve the study objective, the faculty online readiness tool for teaching online was used represented in designing of courses, communication, time management, and technical efficacy to collect data. The results showed that the efficacy of designing a course was the highest in classifying the efficacies and abilities of teaching online, followed by the efficacy of communication, the time management and finally, the technical efficacy. The multivariate analysis of variance also showed the demographic changes have no effect on the perceptive importance of the efficacy and ability of teaching online. The results of the Student's *t*-test analysis showed no big difference between the perceptive importance and the efficacy and ability of teaching online.

Some authors (Kumar et al., 2019) conducted a study aimed to reveal award-winning lecturers' opinions about award-winning course design elements and the differences between experienced and novice teachers in distance education. To achieve the study objective, distance interviews were conducted with 8 members of the teaching award winners from all over the US to get their opinions in five areas: 1) courses related to practices, using multimedia resources; 2) students' establishment to digital content individually and collaboratively; 3) students' thinking in learning; 4) the teachers explanation to the aims of distance activities; 5) techniques and evaluations related to the course. In addition, the sample members winning teaching awards confirmed the importance of using data and the evaluation and thinking practices in developing courses online, they feel fun and comfortable in the education environment online, they use a wide range of strategies enabling them to be ready to learning, use data and analysis and other practices to achieve the continuous development and excellence online.

A study by some authors (Martin et al., 2019) aimed to define the design of textbooks, evaluation and valuation practices, and facilities presented online from the point of view of the teachers winning awards. To achieve the study objective, a conceptual framework was developed that focuses on designing courses taught online, the facilities presented in them, and their evaluation and valuation. Interviews with eight members of the teaching award winners from all over the US were conducted. The interviews revealed that the teachers, during their teaching, used a systematic design process and a reversible design that took into account the students' needs and interactions during learning. The study sample members recommended the need for using a variety of real and traditional evaluations, including rating scales to evaluate students, course templates, processes of quality assurance and surveys, learning analysis, peers' revisions of evaluation and valuation, response time, feedback, availability, attendance, and regular communication of some of the facilitation strategies used by award-winning teachers. These views were considered suggestions and recommendations for research and practice in the future to achieve the best practices, standards, and efficacies of effective teaching online.

Some authors (Al-Qahtani, 2019) conducted a study aimed at revealing the degree to which the female teachers of social studies in the moderate stage in Riyadh, Saudi Arabia, achieved the standards of the education award for excellence. The study adopted a descriptive survey and analytical method, as the sample consisted of 33 female teachers of social studies in the moderate stage of public education in Riyadh city. The results showed that the standards of the domain of leading teaching and learning, which were planning for teaching, evaluation skills, and implementation skills, were in the first place with an average of very good, while the standards of the domain of mastery of scientific specialization and professional development among social studies teachers in the moderate stage in the city of Riyadh, came with a whole acceptable grade, as the standard of mastery of scientific specialization was very good and the standard of professional development came with an acceptable grade.

A study by Darwish and Al-Shara (2018) aimed to investigate the reality of the teaching practices of mathematics teachers who won the QRA Award in light of the award's criteria. The study sample consisted of 7 teachers who won the award and 32 students elected intentionally, where observations and interviews were used as instruments for the study. The results showed that all teachers are good at semester and daily planning; most of them employ effective teaching strategies, with a percentage of 86%; 71% of them plan for evaluation and employ its strategies; and 57% do not distinguish between strategies of evaluation and its tools.

Some authors (Bazbaz & Bin Tariff, 2018) conducted a study aimed to identify the patterns of classroom management among teachers who won the QRA Award from their point of view in Jordan. The study sample consisted of all male and female teachers who won the award during the period from 2006 to 2013, which numbered 214, selected by the comprehensive survey, and the study instrument represented in a questionnaire. The results showed that the democratic style is the most widely used, followed by the anarchic style, then the authoritarian style. They also showed that there are no differences due to gender related to the authoritarian style, and there are differences for the females for the both the anarchic and authoritarian styles, there are differences due to the qualification for all patterns for the higher diploma, and there are differences of the years of experience variable for all patterns for experience of more than 10 years.

A study by some authors (Kharbatta, 2016) aimed to identify the sustainability extent of the excellence of teachers who won the QRA Award after winning, and the extent to which the award contributed to enhancing inspiration and creativity among teachers, especially the winners, how to continue their excellence and highlighting the importance of the QRA Award in adding prestige to the teacher's work and highlighting the award's position in the educational community in particular and in the society of Jordan in general. To achieve the study objectives which adopted the quality research, questions were prepared for the interview applied to 7 winners of the award (4 female teachers and 3 male teachers), interviews were conducted with 72 winners' colleagues, as 7 of them were principals and the rest is female and male teachers, and interviews were conducted with 187 teachers' male and female students who won the QRA Award. Some private documents were analyzed which they were obtained from the QRA (2025) and compared to the classroom observations during the visits to the winners in their schools. The study was conducted during the second semester 2015–2016, and to analyze data, open analysis style was used for the answers. The results showed that the society in general shows respect to teachers after winning the award, and they showed that the presence of distinguished in their schools contributed greatly in motivating other teachers. The results also explained that the QRA succeeded greatly in achieving its vision in spreading the culture of excellence in the field through its support to the winners and reveal them in the media, and publish the stories of their success. The winners' motivation increased to preserve the excellence, and their giving increased with the development of their projects quantitatively and qualitatively. The results indicated the great role of the QRA in reinforcing sustainability of excellence professionally, and in the society through involving them in important projects and initiatives. They also indicated that the positive outlook towards the new burdens after winning and their ability to continue in their excellence despite of the challenges.

Alatram (2016) aimed to investigate the understanding level of science nature among science teachers who won QRA Award and its relation to their teaching practices related to scientific concepts. The study instruments represented in a test for scientific concepts, an observation card for classrooms periods and a form of documents analysis to lesson planning. The study sample represented in 6 female teachers who won the QRA Award. The results revealed that most of the female teachers showed a high level of understanding to the science nature, their practices were closed to the constructive practices and there was a correlation between the understanding level of science and teaching practices.

Jarrar and Shawareb (2013) conducted a study aimed to verify the factors the influencing the teachers' excellence from the teachers' point of view who won the QRA Award in Jordan, and now the most influenced factors in educational development towards knowledge economy from the point view of these teachers according to the variables of (gender, educational level, years of experience), as the study sample consisted of 66 male and females teachers (11 male teachers and 55 female teachers) who won the QRA Award until 2012. To achieve the study objective, a questionnaire was developed by the researchers to collect the essential data to evaluate the teachers' perception to the factors of excellence. After the validity and reliability of study instrument were verified and applied to the sample members, the results showed that the most influential factor on the teachers' excellence was the QRA Award as it is considered a good incentive of the teachers' performance. The results also showed that

there were statistically differences among teachers in the domain of the standards of the QRA Award due to gender, educational level and years of experience. In light of the results, the study recommended more attention to standards of quality evaluation, and the need for studying more factors, which may influence the teachers' excellence.

A study by some authors (Al-Saraira, 2012) aimed to identify the effect of the QRA Award in spreading the standards of excellence among first class teachers in Zarqa Governorate, Jordan, and the differences in the teachers' responses according to variables of experience and participation times. To achieve the objectives of the study, two scientific research instruments were built (a questionnaire and an interview), as the study sample which the questionnaire was applied to consisted of 133 first class teachers participated in the award in Zarqa Governorate, while the interview was applied to 13 male and female teachers. The study results showed a high effect of the QRA Award in spreading the standards of excellence on the nine standards, and the results showed no statistically significant differences between the means of the teachers' responses due to variables of experience and participation time.

Some authors (Balfaqih, 2009) also conducted a study aimed to investigate the role of the Hamdan bin Rashid Al Maktoum Award for Distinguished Educational Performance in school reform in the UAE: the reality and aspirations from the teachers' point of view. The study sample consisted of 270 male and female teachers, as the questionnaire was used as an instrument for the study. The results showed that the award contributed in spreading the culture of excellence, increasing professional growth, and improving procedural research and documentation skills, the results also showed that the educational field hopes that the award will get rid of some of the problems related to the documents required to apply for the award, and that teachers will participate in formulating the standards of the award.

Referring to the previous studies, it is found that most of these studies adopted the descriptive analytical method such as the studies by some authors (Fatimawati Adi Badiozaman & Segar, 2022; Al-Qahtani, 2019; Bazbaz & Bin Tariff, 2018), the studies by other authors adopted the quality method through conducting interviews (Martin et al., 2019; Kumar et al., 2019; Kharbatta, 2016), while the third group of the authors combined the descriptive and qualitative methods (Darwish & Al-Shara, 2018; Al-Saraira, 2012). The samples of the most previous studies represented in teachers who won awards of excellence in teaching except for the studies by some authors (Fatimawati Adi Badiozaman & Segar, 2022; Al-Qahtani, 2019).

Most of the studies agreed in their results on the importance of the awards of excellence from the study samples members' point of view in general in developing the teaching practices of the winners who were able to achieve indicators of the adopted standards of excellence to evaluate their performance. It is also noted about the previous studies that they did not pay much attention to the results according to the variables except for the studies by some authors (Jarrar & Shawareb, 2013; Bazbaz & Bin Tariff, 2018), which they concerned with linking the results to the variables of gender, qualification, educational experience, and the study by other authors (Al-Saraira, 2012), which concerned with the variable of experience and participation times of the award. The current study has benefited from the previous studies in supporting the theoretical framework and interpretation of the results. What distinguishes this study is that it is a comparative one between the science teachers and other teachers of different specializations who won the QRA Award in terms of their achievement

to the standards of excellence in the award according to the variables of specialization and gender, and this is something that the previous studies did not deal with, to the best of the researcher's knowledge.

2. Methodology

2.1. Study problem and questions

The development of the educational and cultural methodology for scientific and technological progress requires from the peoples of education in the field of work in general a diverse and most prominent variety of educational curricula as well, through their professional and personal tools, and greatly expanding their scope of ready study and their readiness for the educational outcomes of the curricula at various educational levels, and from experience, they specialize in teaching and their continuous contact with the educational field, and they need to continue in traditional teaching and have low motivation towards teaching, especially science teachers who say the burdens required of them during their teaching work, and this is what chooses from their motivation towards developing their skills and acquiring new experiences and skills that enable them to keep up with the changes, and the developments that occur in the developed curricula.

To motivate the teacher to create new creativity and increase motivation towards teaching; achieving educational excellence for teachers in various countries of the world. These awards include the existence of standards and indicators that require us to go and win these awards, and thus encourage them to excel in performance and achievements, and to acquire creative skills that enable them to raise the quality of education in their schools, and through effective work in evaluating one of these awards is QRA Award. There is a discrepancy in achieving the criteria for this award between the competence of their specialty and their superiority over others. This study aimed to investigate the achievement of the winning scholars' teachers and QRA Award standards of educational excellence in performance and comparison with their colleagues in other specializations, and to identify the indicators of the award criteria that were achieved by them, and to define the problem of the study by answering the following questions:

1. What is the participation degree of science teachers who won the QRA Award compared to their colleagues from other specializations?
2. What is the degree to which the science teachers who won the QRA Award achieved the standards of educational excellence?
3. Does the degree to which the science teachers who won the QRA Award achieved the standards of educational excellence differ according to the teacher's specialization and gender?

2.2. Study objectives

The current study aimed to reveal the degree to which the science teachers who won the QRA Award achieved the standards of educational excellence in light of the adopted standards to the award, and it aimed to reveal the significance of the differences among these teachers according to their gender and specialization.

2.3. Study significance

The importance of the study highlights the role of educational excellence awards for teachers in motivating teachers to demonstrate their skills, abilities, and effective practices during the educational process, which may reflect positively on the development of educational outcomes in their schools. In addition to encouraging teachers who are not participating in these awards to learn about their standards and participate. Theoretically, this study may contribute to enriching the theoretical literature with new knowledge and results related to the standards of educational excellence and how these standards are achieved by teachers nominated for the award annually. From a practical standpoint, this study will allow teachers who wish to nominate for the award to see the results of the award winners and the degree to which they achieve its standards, and provide them with experience and knowledge. It relates to the standards of the educational excellence awards in general and the QRA Award in particular to teachers, which may help them reach advanced stages and win the award in the coming years after they understand and know how to achieve the award's conditions and specific criteria.

2.4. Terminological and procedural definitions

Terminological and procedural definitions include:

- Achievement degree of excellence standards. It is procedurally defined as the degree that teachers have got in the various specializations who won the QRA Award in every standard of the general evaluation of the award which numbered nine standards through their achievement to the indicators of these approved standards by the award whom were evaluated during the period 2013–2020, as these standards represented in 1) personal philosophy; 2) effectiveness of education; 3) resources management; 4) professional development; 5) shared relationships; 6) professional ethics; 7) creativity, 8) innovation; 9) evaluation, outputs, and achievements;
- The QRA Award. It is one of the yearly awards belongs to the QRA Award launched by sublime royal will in 2005–2006, as it targets the distinguished teachers in the public schools in Jordan and contributes in improving their academic and professional levels, develop the teaching profession, reinforce the distinguished teachers, spread the excellence culture in the field and improve the teacher's image, and recognize his merit by providing material and moral rewards to the winning teachers after evaluating their work and performance based on certain standards by the award (Association of Queen Rania Award for Excellence in Education, 2025);
- Science teachers who won the QRA Award. They are the science teachers in public schools who, in previous sessions during the period between 2013–2020, got high points in the performance indicators for every standard of the QRA Award approved by the QRA, and based on this, they deserved to win the award.

2.5. Study limits

The study limits represented in the following:

- Spatial limits. All public schools in Jordan including the teachers of various specializations who won the QRA Award;
- Human limits. All the teachers who won the QRA Award during the period from 2013–2020;

- Time limits. The study was conducted in the second semester of the academic year 2022–2023;
- Objective limits. The study was limited to the approved standards in the QRA Award mentioned in the nomination applications, which numbered nine, which are: 1) personal philosophy; 2) effectiveness of education; 3) resources management; 4) professional development; 5) shared relationships; 6) professional ethics; 7) creativity, 8) innovation; 9) evaluation, outputs, and achievements.
- Generalization of the study results is limited in light of the award standards and the teachers' results who won the award according to these standards.

2.6. Study method

The adopted method in this study is the descriptive analytical one.

2.7. Study population

The study population consisted of all teachers who won the QRA Award which numbered 383 male and female teachers from the various governorates of Jordan.

2.8. Study sample

The study sample consisted of all teachers with various specializations who won the QRA Award during the period from 2013–2020 selected by the comprehensive survey method based on the similarity of the standards, where these teachers subjected to during this period which numbered 180 male and female teachers in various specializations. Table 1 shows the distribution of the study sample members.

Table 1. Distribution of the study sample according to specializations (source: created by authors)

Specialization	Gender		Total	Percentage, %
	Male	Female		
Science teachers	8	23	31	17.2
Other specializations	21	128	149	82.3
Total	29	151	180	100

2.9. Study instrument

The study instrument consisted of the standards of the QRA Award which numbered nine, as they were approved in the QRA Award since it was launched, and they are as follow: 1) personal philosophy; 2) effectiveness of education; 3) resources management; 4) professional development; 5) shared relationships; 6) professional ethics; 7) creativity, 8) innovation; 9) evaluation, outputs, and achievements. These standards were set carefully, and presented to arbitrator sand educational specialists from within the award and from faculty members of education in Jordanian universities. The researchers in this study extracted construct validity indicators, which represent the correlation of the criteria with the overall degree. The values

of the correlation coefficients ranged between 0.48 and 0.63, as all of which were considered appropriate for the purposes of the current study.

2.10. Correction of study instrument

To judge the degree of achievement of excellence standards, the equation was used as following:

- the highest degree can be obtained on the standard, when the lowest degree is 3;
- $7 - 0 = 2.33$;
- from 1 to 3.33 is low; from 3.34 to 5.67 is moderate; from 5.68 to 7 is high.

3. Study results and discussion

Results related to the first question and their discussion which state: what is the participation degree of science teachers who won the QRA Award compared to their colleagues from other specializations?

To answer this question, frequencies and percentages of the teachers who won the QRA Award according to the scientific specialization. Table 2 shows this.

Table 2. Distribution of the study sample according to their specialization (source: created by authors)

Number	Specialization	Frequency	Percentage, %
1	Science	31	17
2	Mathematics	15	8
3	English language	21	12
4	Islamic education	4	2
5	Social studies	8	4
6	Arabic language	19	11
7	Computer	15	8
8	Art	2	1
9	Vocational education	17	9
10	Classroom teacher	27	15
11	Child education	15	8
12	Special education	6	3
	Total	180	100

It is noted from the results of Table 2, that the participation percentage of science teachers was the highest among all other specializations, which reached 17%, followed by the participation percentage of the classroom teacher specialization which reached 15%. This may be due to that the natures of science subjects give teachers greater opportunity compared to other subjects for diversify of activities and experiences, and use different strategies that increase students' motivation towards learn. A study by Mana A. Al-Shehri (2020) indicated that teaching science requires a teacher who is innovative in his preparation and training, and he can use electronic programs and applications to go with the events and changes

around him in order to achieve the desired goals. May be this encourages science teachers to participate in the QRA Award as it is a suitable opportunity to show their achievements and activities that they perform in the educational field.

Results related to the second question and their discussion: what is the degree to which the science teachers who won the QRA Award achieved the standards of educational excellence?

To answer this question, means and standard deviations of the science teachers' degrees who won the award in the nine standards approved to the QRA Award were extracted. Table 3 shows this.

Table 3. Means and standard deviations of the science teachers' achievement degrees who won the Queen Rania of Jordan Award for Distinguished Teacher to the educational excellence standards (source: created by authors)

Standard	Specialization	Number	Mean	Standard deviation	Degree
Personal philosophy	Science	31	5.32	0.54	Moderate
Learning and teaching	Science	31	5.19	.750	Moderate
Learning for life	Science	31	4.71	.820	Moderate
Professional development	Science	31	4.77	.920	Moderate
Participated relationships	Science	31	4.77	1.09	Moderate
Professional ethics	Science	31	5.65	.550	Moderate
Innovation	Science	31	4.45	.810	Moderate
Evaluation	Science	31	4.10	1.14	Moderate
Achievements	Science	31	4.48	.960	Moderate
Total degree	Science	31	4.85	.610	Moderate

It is noted from the results of Table 3, that the means of the grades of the science teachers' grades who won the standards of the QRA Award all came in a moderate degree, as the personal philosophy standard came in first place with a mean of 5.32, followed by the learning and teaching standard with a mean of 5.19, while the evaluation standard came in last place with a mean of 4.10.

Results related to the third question and their discussion which state: does the degree to which the science teachers who won the QRA Award achieved the standards of educational excellence differ according to the teacher's specialization and gender?

To answer this question, means and standard deviations were extracted for the teachers' degrees who won the QRA Award according to specialization and gender. Table 4 shows this.

Table 4 shows that the achievement degree of the educational excellence standards who won the QRA Award came with a moderate degree in general, and in order to reveal the differences between the teachers' achievement degree who won the QRA Award for the educational excellence standards according to specialization and gender, means, and standard deviations of the teachers' degrees who won the award standards according to specialization and gender. Table 5 shows this.

It is noted from the results of Tables 4–5 that there apparent differences between the means of the teachers' achievement degree of the educational excellence standards who won the QRA Award according to specialization and gender, and to now if these differences have statistical significance, means and standard deviations were extracted. Table 6 shows this.

It is noted from Table 6, that there are no statistically significant differences at $\alpha = 0.05$ among the means of the teachers' achievement degree of the educational excellence standards who won the QRA Award according to gender, as the F -test values were 0.225. While the results showed that there are statistically significant differences at $\alpha = 0.05$ among the means

Table 4. Means and standard deviations of the teachers' achievement degree who won the Queen Rania of Jordan Award for Distinguished Teacher according to specialization variable (source: created by authors)

Standard	Specialization	Number	Mean	Standard deviation	Degree
Personal philosophy	Science	31	5.32	.540	Moderate
	other	149	5.06	.610	Moderate
Learning and teaching	Science	31	5.19	.750	Moderate
	Other	149	4.97	.690	Moderate
Learning for life	Science	31	4.71	.820	Moderate
	Other	149	4.68	.700	Moderate
Professional development	Science	31	4.77	.920	Moderate
	Other	149	4.66	.910	Moderate
Participated relationship	Science	31	4.77	1.09	Moderate
	Other	149	4.80	1.03	Moderate
Professional ethics	Science	31	5.65	.550	Moderate
	Other	149	5.60	.570	Moderate
Innovation	Science	31	4.45	.810	Moderate
	Other	149	3.96	.990	Moderate
Evaluation	Science	31	4.10	1.14	Moderate
	Other	149	3.88	.930	Moderate
Achievements	Science	31	4.48	.960	Moderate
	Other	149	4.56	.900	Moderate
Total degree	Science	31	4.85	.610	Moderate
	Other	149	4.69	.500	Moderate

Table 5. Means and standard deviations of the teachers' achievement degree who won the Queen Rania of Jordan Award for Distinguished Teacher for educational excellence standards according to specialization and gender variables (source: created by authors)

Gender	Specialization	Mean	Standard deviation	Number
Male	Science	4.92	0.65	8
	Other	4.51	0.38	21
	Total degree	4.63	0.49	29
Female	Science	4.83	0.60	23
	Other	4.72	0.51	128
	Total degree	4.73	0.52	151
Total	Science	4.85	0.61	31
	Other	4.69	0.50	149

Table 6. Results of two-way analysis of variance to examine the significance of differences between means of the teachers' achievement degree of the educational excellence standards who won the Queen Rania of Jordan Award for Distinguished Teacher according to specialization and gender (source: created by authors)

Source of variance	Sum of squares	Degrees of freedom	Sum of squares	<i>F</i> -test	Significant level
Gender	0.0600	1	0.0600	0.225	00.636
Specialization	1.213	1	1.213	4.574	0.0340
Error	46.658	176	0.2650		
Total	4052.132	180			
Corrected total	48.154	179			

to the teachers' achievement degree who won the QRA Award according to the specialization, as the *F*-test value reached 5.474, and referring to the table of means 5, it is noted that these differences due to the science teachers, as the their mean was 4.85, while the teachers of other specializations reached 4.69.

4. Discussion

The descriptive results showed that the means the science teachers' grades who won the standards of the QRA Award all came in a moderate degree, this result may reveal a presence of shortcomings among the science teachers who won the award, where they are informed with this through sending them evaluation reports, as this improves and develops these teachers' performance in the field by identifying the weakness among them, and they are expected to treat them during their service and transfer this experience to the science teachers working in the field, which may increase the enthusiasm of these teachers and their motivation towards giving and excellence in teaching like their colleagues and participation in the award and obtaining it.

The science teachers must search for more activities and achievements in the standards of evaluation, achievements, life skills and innovation, since these standards got the least percentages in their means, look for ways to develop and improve these standards, employ electronic applications and simulation programs, and other interactive applications where their use increases the performance development, and thus reach qualitative educational outputs. This result disagrees with the results of the study by some authors (Al-Qahtani, 2019), which showed that the evaluation standard came in the first place in terms of the degree of achievement degree by the winning teachers. In addition, the results aligned with the study by some authors (Kharbatta, 2016) results which indicated results showed that the society in general shows respect to teachers after winning the award, and they showed that the presence of distinguished in their schools contributed greatly in motivating other teachers. Furthermore, there were no statistically significant differences among the means of the teachers' achievement degree of the educational excellence standards who won the QRA Award according to gender, and this may be due to that both male and female teachers participating in the award have a high degree of readiness to participate

in the award and have previous knowledge of the standards of the award, and they have portfolios, evidence and proofs to achieve this but with different images based on the nature of the specialization and work environment. Therefore, it is difficult to find differences between them, as both of them males and females are ready to participate and have the desire to win and achieve what they aspire to. This result agrees with the results of the study by some authors (Jarrar & Shawareb, 2013), which showed that there were no statistically significant differences due to gender, educational level, and experience variables. While the results showed that there are statistically significant differences between the means to the teachers' achievement degree who won the QRA Award according to the specialization, and this may be due to that the science teachers have the opportunity of diversity, can benefit from technology and use interactive programs while teaching since the nature of science as its teaching requires technical and scientific skills in addition to the cognitive competences among teachers, so that they reach their students to understanding level and achieve enjoyment for them during their learning, where many subjects and scientific concepts can be reached through conducting experiments and scientific practical activities, in addition to using educational videos and various educational resources available to them through websites to simulate the content of the scientific subject they are studying, as all of this increase the presence of evidence and proofs related to the standards of the QRA Award comparing to the rest of subjects, which may increase their ability to achieve a high level of the standards of the award.

5. Conclusions

The existence of awards for educational excellence among teachers is an approach followed by most countries in the world to honor and motivate teachers who make exceptional efforts in the educational process, to encourage them to improve and develop their performance, to consolidate the values of educational excellence in them, and to raise the level of quality in the field of education. Science teachers are considered one of the groups most in need of these awards due to the great effort they exert in teaching difficult scientific subjects. This requires teachers to search for various teaching strategies and methods among students to facilitate students' understanding of science. The existence of this award encourages science teachers, like other teachers, to excel in performance and search for innovative, creative strategies and methods. In addition, the educational excellence awards contribute to enhancing the performance of teachers in the field, paying attention to developing their skills and teaching practices, and giving them more advantages and additional development opportunities to keep pace with scientific and technological developments, and achieve progress and prosperity for their societies. The QRA Award contributes to raising the level of education by encouraging teachers in the field to demonstrate all their skills, creativity, and teaching strategies that reflect positively on their students in order to achieve qualitative educational outcomes. The results of this study revealed that the science teachers who won the award are distinguished from others. Of teachers in other specializations, the results also showed that the degree of their achievement of the criteria of the QRA Award was moderate.

6. Recommendations

In light of the results reached, the researchers give the following recommendations for teachers' ministry of education and researchers everywhere:

- Implementing awareness programs and workshops for teachers in the government sector by the Ministry of Education (Jordan) to inform them of the criteria of the QRA Award, its stages, and the requirements for winning this award;
- Conducting more studies on the quality of evaluation of performance standards in the QRA Award and its implications from the point of view of school administrations and teachers enrolling in the award;
- Conducting a comparative study on educational excellence awards in Jordan with other countries to benefit from the standards and indicators contained therein.

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