



مجلة كلية التربية . جامعة طنطا  
ISSN (Print):- 1110-1237  
ISSN (Online):- 2735-3761  
<https://mkmgt.journals.ekb.eg>  
المجلد (٨٩) يناير ٢٠٢٣م



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**The Evaluation of the Preparation Program for Teachers of  
Autism Spectrum Disorder in light of the Standards of the  
Council of Exceptional Children from the Point of View of  
Faculty Members at Taif University**

**Submitted by**

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**Volume (89), Issue 1, January 2023**



## Abstract

This study aimed to identify the level of application of the standards of the Council of Exceptional Children (CEC) in the Autism Spectrum Disorder (ASD) Teachers' Preparation Program at Taif University (TU) from the point of view of faculty members. A descriptive approach was employed with a questionnaire as the research tool. The questionnaire was prepared and translated from English into Arabic and developed based on the "Professional Preparation Standards for Special Educators" (PSSE) of the standards of the CEC. The questionnaire included seven standards, which included 32 items that measured the availability of the standards of the CEC in the ASD teachers' preparation program. The study sample consisted of 36 faculty members, who taught in the ASD program in the Department of Special Education at TU. The results of the study revealed the level of the standards of the CEC in the program for preparing teachers of ASD at TU from the point of view of the faculty members at TU, in general, was at a high degree. In addition, the level of application of the seven standards included in the study tool was at a high degree. In light of the results, the study recommended conducting similar studies at universities in the Kingdom of Saudi Arabia to substantiate the findings.

**Keywords:** Council for Exceptional Children, CEC's initial special educator preparation standards, Preparation program, Teachers of autism spectrum disorder



## 1. INTRODUCTION

Teachers play an important role in the development of a country, especially special education teachers, who are responsible for enhancing these students' abilities to have a normal life. Furthermore, with the increase in the number of individuals with a disability, especially individuals with ASD, which are 3% of Saudi's population, the need for teachers' preparation has increased. ASD, also known as autism, is a developmental disorder diagnosed on the basis of social and communication weaknesses and repetitive patterns of behavior (Lord et al., 2020). Accordingly, individuals with ASD need special services in speech, language, motor, and adaptive skills, as well as relevant psychiatric disorders. To provide educational services to individuals with ASD, the special educator must be qualified, specialized, and trained in university education programs (Lord et al., 2018).

It is imperative teacher preparation programs adequately equip educators with the knowledge and practical abilities necessary to educate students and prepare them for their future (Abusukkar et al., 2020). The quality of teachers is dependent upon on their acquired knowledge and skills, so it is important education programs provide educators with sufficient knowledge to develop necessary skills (Katitia, 2015). To ensure that teacher's preparation programs are effective and sufficient in preparing teachers to be experts in their field, it is important to evaluate these programs. Evaluation is important for developing educational



programs, enhancing their strengths, and identifying their weaknesses. While doing so, it is important to keep the present, as well as future, requirements of education in mind. Evaluation can eliminate teacher difficulties and develop well-equipped programs by following comprehensive standards that focus on theory, research, and experience (Abusukkar et al, 2020).

Since 1922, the CEC standards are one of the international standards that focus on preparing teachers to most effectively educate students with special needs. The CEC standards were created based on studies and recommendations to ensure teachers acquire the highest level of skills and knowledge to prepare them adequately for the special education field (CEC, 2014). The CEC Standards include seven standards designed for preparing special educators in their careers in the education field which are: (1) Learner development and individual learning differences, (2) Learning environments, (3) Curricular content knowledge, (4) Assessment, (5) Instructional planning and strategies, (6) Professional learning and ethical practice, and (7) Collaboration (CEC, 2014). With the development of education, it has become necessary to build and evaluate a teacher preparation program according to standards that depend on the latest research in the field of education.

## 2. PROBLEM STATEMENT

In recent years, the education system has dramatically changed and progressed in Saudi Arabia, and there is now



significant emphasis on the preparation of special education teachers (Battal, 2016). Preparing special education teachers is an important part of developing educators' knowledge and skills, which is required for teachers' successful entry into the school community (Hamilton–Jones, & Vail, 2014). Specifically, with increasing awareness of ASD, educational programs are needed for educators who teach students with ASD.

The first ASD program in Saudi Arabia was opened in 2006 at Taif University (TU). Since its establishment, Saudi Arabia has continued to participate in the preparation of special education teachers who teach students with ASD. Accordingly, the evaluation of this program through faculty members is important to ensure it is developed according to the needs of teachers and students. The process of evaluation will demonstrate points of weakness and strength in the program, where suitable decisions can be made to solve problems and continue the process of development (Fullerton et al., 2011). Since research is lacking on the evaluation of teacher preparation programs according to the standards of the CEC, for teachers who work with students with ASD in Saudi Arabia, in particular, this study will provide valuable insight and fill the gap in research.



### 3. STUDY QUESTIONS

This study addressed two questions:

Research Question No. 1: What is the level of Application of the standards of the CEC in the program for preparing teachers of ASD at TU, in general?

Research Question No. 2: What is the level of Application of the standards of the CEC in the program for preparing teachers of ASD at TU for each of the 7 standards (learner development and individual learning differences, learning environments, curricular content knowledge, assessment, instructional planning and strategies, professional learning and ethical practice, and collaboration)?

### 4. PURPOSE OF THE STUDY

The purpose of this study was to identify the level of application of the standards of the CEC, in general, as well as the 7 standards which are: (1) Learner development and individual learning differences, (2) Learning environments, (3) Curricular content knowledge, (4) Assessment, (5) Instructional planning and strategies, (6) Professional learning and ethical practice, and (7) Collaboration, in the program for preparing teachers of ASD at TU.

### 5. SIGNIFICANCE OF THE STUDY

*Theoretical Importance.* The importance of this study lies in the importance of the preparation program for teachers of ASD at TU, which is important for pre-service teachers and those working with students with ASD. Additionally, this study sought to evaluate



the program for preparing teachers of students with ASD at TU in light of the standards of the CEC, due to a vast research gap in the field. More research is needed to have a better understanding about the knowledge and the skills that the teachers who teach students with autism are needed.

*Applied Importance.* The outcome of this study may help with the development of the program for preparing teachers of students with ASD at TU and improve the quality of education, as well as increase the quality of teachers and their support in the light of the standards of the CEC.

## 6. STUDY LIMITATIONS

There were four limitations which this study faced:

**6.1 The time limitation:** This study was conducted in the school year 2021–2022.

**6.2 The place limitation:** The setting of this study included Faculty Members at TU in Saudi Arabia.

**6.3 The human limitations:** This study was conducted with participants who were Faculty Members at the department of special education at TU in Saudi Arabia.

**6.4 The objective limitations:** The CEC standards for Professional Preparation for Special Educators.

## 7. STUDY TERMINOLOGY

**7.1 Preparation program for teachers:** This refers to a university program designed to prepare pre–service and in–service teachers



to deal with learners and colleagues as experts in their field (Katitia, 2015).

**7.2 The CEC's Professional Preparation Standards:** It is defined as standards that are used to inform special educator preparation programs and organizations, so educators become knowledgeable of the most effective practices (The Council for Exceptional Children,2022).

**7.3 ASD:** Defined as a neurodevelopment disorder that impacts an individual's ability to communicate, interact socially, and adapt to their environment (Grzadzinski et al., 2021).

## 8. PREVIOUS STUDIES

Previous research has extensively informed this research, although it is not specific to the field of ASD at TU. Research conducted by Al-Suhaimi and Alzaraa (2021) aimed to identify teachers' level of applying the CEC Standards in individual educational programs for students with intellectual disabilities, as perceived by the teachers. The descriptive survey method was used in the study. The researcher employed a questionnaire, which included the standards of the CEC for Instructional Planning. The study sample included 137 intellectual education teachers in governmental intellectual education institutes and programs for the primary stage in Jeddah governorate. The results indicated that the level of applying the CEC standards for Instructional Planning in individual educational programs for students with intellectual disabilities was significant. The researchers expressed the need to



have training programs for teachers in the field of planning individual educational programs based on international standards.

The study by Abusukkar et al. (2020) focused on evaluating the extent to which the special education program in the College of Education at Princess Nourah University (PNU) in the Kingdom of Saudi Arabia aligns with the standards of the CEC. The mixed-method approach was used to answer the research question by using a questionnaire and interviews to collect data. The study sample included 20 pre-service special educators, 20 cooperating teachers, and four university faculty members. There results suggested pre-service special education teachers' perceptions of the degree to which the program prepared them for each of the seven standards were all high and ranged from 3.48 to 3.94. Also, the results asserted the special education program at PNU has significant strengths, such as the availability of field training and the utilization of various learning strategies and methods. On the other hand, the results also revealed areas of deficiency, such as lack of field observation and repetitive topics and content. The researcher recommended training field supervision for pre-service teachers and periodic examination of special education programs.

A study conducted by Al-Ajmi and Al Saifi (2018) assessed the level of performance of intellectual education teachers in the light of professional standards of the CEC in AlMadinah Region. The descriptive approach was used in the study through a questionnaire as the research tool. The study used a sample of



150 intellectual education teachers in the AlMadinah Region. The result indicated the professional standards of the CEC were found in the performance of intellectual education teachers to a great degree in their ethical professional practices, and there were individual differences in learning, language, social interactions, cooperation, educational strategies, educational planning, and students' development.

Al-Qurni (2019) conducted a study to identify the degree of the availability of the standards of the CEC in autism and behavioral disorders and explore the obstacles faced by the activation of these standards at a teacher education program at King Saud University, from female student teachers' perspective. The descriptive method was used to answer the research question, and a questionnaire was designed as the instrument. The study sample included 34 female undergraduate students in the autism and behavioral disorders program at King Saud University. The results of the study suggested the program of autism and behavioral disorders program at King Saud University applied all the seven standards of the CEC to a high degree and that few obstacles existed. The researcher recommended reviewing the autism and behavioral disorders teacher education program at King Saud University.

Another study was conducted by Alzaraa (2016), which assessed the quality of the diagnostic process in special education centers and institutes in Jeddah city, according to the standards of



the CEC. The study utilized a descriptive approach to answer the research question, and a questionnaire was used to collect and measure data on the study variables, which included gender, years of experience, and type of centre/institute, which was either Government or private setting. The results of the study, containing 429 participants of special education teachers working in special education centers and institutes, suggested that the individual and program assessment ranked the highest average, while leadership and policies received the lowest average. The researcher acknowledged the need to adhere to the global standards of The CEC and emphasized the importance of further research studies examining additional variables.

Another study by Alzaraa (2016) aimed to evaluate the undergraduate program of behavioral disorders and ASD at Jeddah University from students' perspective, in light of the standards of the CEC. The descriptive method was used to answer the research question by using a questionnaire to collect and measure data. The sample of the study consisted of 46 final-year students who were in the behavioral disorders and autism program at Jeddah University. The results indicated the representation of standards of the CEC from the point of view students was high. The researcher recommended similar studies be conducted in other Saudi Arabia universities that have a program for ASD, comparing the result to develop the programs.



The study conducted by Al-Miqdad (2013) assessed the extent to which the special education program in Jordanian Universities aligned with the standards of the CEC from the Point of View of Faculty Members using the descriptive approach to answer the research question. The questionnaire was used to collect and measure data. The results of the study, containing 50 participants, suggested the level of application of the standards of the CEC in the special education program in Jordanian Universities was moderate. Moreover, the results indicated that there were no differences among gender and years of experience. The researcher recommended providing continuous training for teachers in accordance with the standards in the field of special education.

Obeidat and Al-Duwaidah (2013) conducted a study seeking to identify the professional competencies necessary for teachers of children with ASD, according to the standards of the CEC. The descriptive statistic approach was used, and the study employed a questionnaire, based on the standards of the CEC consisting of (38) items distributed on (8) dimensions for data collection. The study sample included 130 teachers in the Saudi city of Jeddah. The research results indicated that, in general, all the teachers have high grades in the professional competencies based on the standards of the CEC. The researcher recommended including the standards of the CEC within preparation programs in Saudi universities.



### ***8.1 Commenting on Previous Studies***

By reviewing previous studies, there is some research which partially agrees with the purpose of this study. Al-Miqdad's (2013) study agreed with this study regarding the selection of the sample for the study, which was faculty members. While Al-Qurni's (2019) study agreed with this study regarding the evaluation of autism and behavioral disorders teacher education program at King Saud University, it differed in that the sample selection was undergraduate students in the autism and behavioral disorders program at King Saud University. The current study also differs from the studies conducted by Abusukkar et al. (2020) and Alzaraa (2016), as the sample in these studies were also undergraduate students in the field of special education. Also, it differs from research with teachers in the field of special education as the study selection sample (Al-Suhaimi & Alzaraa, 2021; Al-Ajmi and Al Saifi, 2018; a- Alzaraa, 2016; Obeidat and Al-Duwaidah; 2013).

However, previous studies are similar, as they used the CEC standards to evaluate the programs, which was also the objective of this research. Previous studies guided this research in selecting the research methodology and the best methods for preparing the questionnaire, and collecting and analyzing data. Moreover, previous studies are similar in terms of their recommendations regarding the use of the CEC to evaluate special education programs. However, previous research was not consistent with the purpose of this study, which focused on



evaluating the application of the standards of the CEC in the program for preparing teachers of ASD from the Point of View of Faculty Members at TU, hence the need to conduct this research to fill the gap. This study may help with the development of programs for preparing teachers of students with ASD, as well as increase the quality of teachers and their support.

## 9. METHODOLOGY

This study used a descriptive approach, and a questionnaire was used to collect the data for measuring the level of the application of the standards of the CEC in the program for preparing teachers of ASD at TU. This approach helped to answer research questions, collect data using a questionnaire, analyze data, and interpret results by comparing them with prior studies (Creswell, 2015).

### *9.1 The Variables of The Study*

This study looked at faculty perceptions of the availability of standards for preparing teachers of ASD at TU and faculty perceptions of the availability of each of the 7 standards: learner development and individual learning differences, learning environments, curricular content knowledge, assessment, instructional planning and strategies, professional learning and ethical practice, and collaboration as variables and it needs a descriptive statistics.



## ***9.2 The Statistical Processing***

In order to answer this research question, descriptive statistics were calculated for each item on the survey, identifying the extent to which faculty at TU perceived the availability of the standards of the CES in the program of ASD.

## ***9.3 Sample Selection***

The sample consisted of 36 faculty members who taught the program for preparing teachers of ASD in the Department of Special Education at TU. By using an online sample size calculator, with an estimated margin of error of 6% and with a 95% confidence level, the required sample size was determined to be a minimum of 80 with an estimated response rate of 80%. Therefore, 43 participants were invited to complete the online survey to achieve a minimum 80% response rate.

## ***9.4 Tools of the Study***

A survey was used as a research tool to collect data from the participants. A questionnaire focused on the level of availability of the standards of the CEC in the program for preparing teachers of ASD at TU. The instrument used in the survey was the "Professional Preparation Standards for Special Educators" (PSSE). The PSSE is a tool designed to measure the level of availability of the standards of the CEC in the program for preparing teachers of ASD at TU. This tool was created, translated from English to Arabic language, and developed based on The CEC Professional



Preparation Standards (2022) and it evaluated 7 standards of the Professional Preparation Standards for Special Educators.

Afterward, questions based on these standards were formulated. This questionnaire was refined with the help of experts in special education. To determine the validity and reliability, a pilot test was carried out and distributed to 20 respondents in special education, and they were asked to complete the survey. After gathering the results, and analyzing the data, the results of the pilot test showed that the survey was deemed valid for other participants. The reliability Cronbach alpha results indicated the reliability estimate of the PSSE scale was .92. Therefore, it was used for its stability and high credibility.

The final draft of the PSSE questionnaire was comprised of 7 standards with 32 items evaluated (learner development and individual learning differences, learning environments, curricular content knowledge, assessment, instructional planning and strategies, professional learning and ethical practice, collaboration). These questions utilized a Likert scale for responses from 1 to 3 (Disagree = 1, neutral = 2, Agree = 3). (see Table 1). Regarding the potential responses, a mean satisfaction score of 3 was High, a mean satisfaction of 2 was Moderate, and a mean satisfaction of 1 was Low.



**Table 1**

*The PSSE Form*

Items	
1- Learner development and individual learning differences	4
2- Learning environments	5
3- Curricular content knowledge	4
4- Assessment	4
5- Instructional planning and strategies	6
6- Professional learning and ethical practice	5
7- Collaboration	4

Note. Rating scale: (*Disagree = 1, neutral = 2, Agree = 3*).

## 10. DATA ANALYSIS PROCEDURES

To analyze the faculty perceptions of the level of application of the standards in the teacher preparation program at TU, the scale will be analyzed both in whole and by subscale. After receiving permission, the survey was sent out and enough completed surveys were received, which was 84% of 43 participants. Then the data was transferred to the Statistical Package for the Social Sciences (SPSS) to be reviewed and analyzed. Descriptive statistics are listed for the total scores on the PPSE. Then, each of the 7 dimensions were analyzed by providing descriptive statistics (mean, median, standard deviation, 95%

confidence intervals) for each of the 7 dimension subscales, along with frequencies of high/moderate/low for each subscale.

## 11. RESULTS

### 11.1 Descriptive Statistics of the Sample Selection

The study sample consisted of 36 (100%) faculty members who taught in the program for teachers of ASD at TU. Of those 36 participants, 21 (58.3%) were male and 15 (41.7%) were female. Additionally, 9 (25.0%) of those 36 participants held bachelor's degrees, and 27 (75.0%) held doctorates. (see Table 2).

**Table 2**

*Distribution of study individuals according to the teach in an autism program, gender and degree*

Demographic Variables	Frequency	Percentage
<i>teach in an autism program</i>	36	100%
Gender		
Male	21	58.3%
Female	15	41.7%
Academic degree		
Bachelor's	9	25.0%
Master's	0	0%
Doctorate	27	75.0%
<b>Total</b>	36	100%

### 11.2 Descriptive Statistics for Research Question No. 1

To answer the first research question that focused in the faculty perceptions of availability of standards for preparing teachers of

ASD at TU in general, the arithmetic mean and standard deviation were calculated. (see Table 3).

**Table 3**

*The Faculty Members Responses to The 7 Standards of the CEC  
in General*

N.	Standers	No. items	Mean	Std. Deviation	Rank	Responses
1	Learner development and individual learning differences	4	2.82	0.251	4	High
2	Learning environments	5	2.82	0.250	3	High
3	Curricular content knowledge	4	2.74	0.319	5	High
4	Assessment	4	2.74	0.332	6	High
5	Instructional planning and strategies	6	2.83	0.183	2	High
6	Professional learning and ethical practice	5	2.88	0.205	1	High
7	Collaboration	4	2.67	0.649	7	High
		32	2.79	0.244		High

Table 3 shows the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "The 7 Standards in General" and its standards with a high degree with a mean range (2.79). Moreover, standard number (6) "Professional learning and ethical practice" was ranked the most effective with a mean of (2.88), and the least effective was standard number (7) "Collaboration" with a mean of (2.67).

### ***11.3 Descriptive Statistics for Research Question No. 2***

To answer the second research question that focused on the faculty perceptions of availability of each of the 7 dimensions:

learner development and individual learning differences, learning environments, curricular content knowledge, assessment, instructional planning and strategies, professional learning and ethical practice, and collaboration, the (mean, median, standard deviation, 95% confidence intervals) for each of the 7 dimension subscales, along with frequencies of high/moderate/low for each subscale were calculated.

### Standard 1: Learner Development and Individual Learning Differences

**Table (4)**

*The Faculty Members Responses to The 4 Items of This Standard*

N.	Item	Frequency	degree of approval			mean	Std. Deviation	Rank
		Percentage	High	Moderate	Low			
1	Identifies the similarities and differences between normal individuals and individuals with ASD	F	31	3	2	2.8	0.525	3
		%	86.1	8.3	5.6			
2	Defines the characteristics of individuals with ASD and their needs	F	32	4	-	2.89	0.319	2
		%	88.9	11.1	-			
3	Identifies different learning styles and strategies	F	33	3	-	2.92	0.280	1
		%	91.7	8.3	-			
4	Defines the role of the family in developing the educational needs of individuals with ASD	F	27	6	3	2.67	0.632	4
		%	75.0	16.7	8.3			
<b>Mean</b>						<b>2.82</b>	<b>0.251</b>	High

Table 4 shows the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "Learner development and individual learning differences" and its items with a high degree with a mean range (2.82). Moreover, the item number (3) "Identifies different learning styles and strategies" was ranked as most effective with a mean of (٢.٩2), and the least effective was item number (4) "Defines the role of the family in developing the educational needs of individuals with ASD with a mean of (٢.67).

## Standard 2: Learning Environments

**Table (5)**

*The Faculty Members Responses to The 5 Items of This Standard*

N.	Item	Frequency	degree of approval			mean	Std. Deviation	Rank
		Percentage	High	Moderate	low			
1	Create an inclusive and safe learning environment	F	26	7	3	2.64	0.639	4
		%	72.2	19.4	8.3			
2	Activate the group participation and positive interaction	F	34	2	-	2.94	0.232	3
		%	94.4	5.6	-			
3	Prepare the strategies and means to implement plans and programs	F	35	1	-	2.97	0.167	1
		%	97.2	2.8	-			
4	Promotes the use of assistive technology in education	F	34	2	-	2.94	0.232	2
		%	94.4	5.6	-			
5	Prepare interventions that help to adapt to different environments and to manage crises	F	25	7	4	2.58	0.692	5
		%	69.4	19.4	11.1			
<b>Mean</b>						<b>2.82</b>	<b>0.250</b>	High

Table 5 shows the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "Learning environments" and its items with a high degree with a mean range (2.82). Moreover, item number (3) "Prepare nt plans the strategies and means to impleme and programs" was ranked the most effective with a mean of (2,97), and the least effective was item number (5) "Prepare interventions that help to adapt to different environments and to manage crises" with a mean of (2,58).

### Standard 3: Curricular Content Knowledge

**Table (6)**

*The Faculty Members Responses to The 4 Items of This Standard*

N.	Item	Frequency	degree of approval			mean	Std. Deviation	Rank
		Percentage	High	Moderate	low			
1	Provides knowledge in the basic philosophies and theories for curriculum development and teaching methods	F	22	11	3	2.53	0.654	4
		%	61.1	30.6	8.3			
2	Qualifies the use of tools, technology, and methods	F	34	2	-	2.94	0.232	1
		%	94.4	5.6	-			
3	Includes a clear sequence of general and special study levels	F	30	2	4	2.72	0.659	3
		%	83.3	5.6	11.1			
4	Trains to modify curricula and teaching methods	F	28	8	-	2.78	0.422	2
		%	77.8	22.2	-			
<b>Mean</b>						<b>2.74</b>	<b>0.319</b>	High

Table 6 shows the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "Curricular Content Knowledge" and its items with a high degree with a mean range (2.74). While, item number (2) "Qualifies the use of tools, technology, and methods" was ranked the most effective with a mean of (2.94), and the least effective was item number (1) "Provides knowledge in the basic philosophies and theories for curriculum development and teaching methods" with a mean of (2.53).

#### Standard 4: Assessment

**Table (7)**

*The Faculty Members Responses to The 4 Items of This Standard*

N.	Item	Frequency	degree of approval			mean	Std. Deviation	Rank
		Percentage	High	Moderate	Low			
1	Provides knowledge in the use of multiple assessment methods and data sources in making educational decisions	F	33	3	-	2.92	0.280	1
		%	91.7	8.3	-			
2	Trains to use formal and informal assessments that are sound impartially	F	21	15	-	2.58	0.500	4
		%	58.3	41.7	-			
3	Provides the knowledge to measure and interpret assessment results and report preparation for educational decision-making	F	26	6	4	2.61	0.688	3
		%	72.2	16.7	11.1			
4	Develops students to engage in the development and modification of individual assessment strategies and to provide feedback	F	30	6	-	2.83	0.378	2
		%	83.3	16.7	-			
<b>Mean</b>						<b>2.74</b>	<b>0.332</b>	High

Table 7 shows the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "Assessment" and its items with a high degree with a mean range (2.74). Moreover, item number (1) "Provides knowledge in the use of multiple assessment methods and data sources in making educational decisions" was ranked the most effective with a mean of (٢.٩٢), and the least effective was item number (4) "Trains to use formal and informal assessments that are sound impartially" with a mean of (٢.٥٨).

### Standard 5: Instructional Planning and Strategies

Table (8)

*The Faculty Members Responses to the 6 Items of This Standard*

N.	Item	Frequency	degree of approval			mean	Std. Deviation	Rank
		Percentage	High	Moderate	Low			
1	Prepares students to rely on evidence in the educational planning process	F	32	4	-	2.89	0.319	2
		%	88.9	11.1	-			
2	Provides knowledge in the use of appropriate strategies for integrating into different environments	F	30	6	-	2.83	0.378	4
		%	83.3	16.7	-			
3	Provides knowledge in the use of appropriate strategies in the development of skills	F	30	6	-	2.83	0.378	3
		%	83.3	16.7	-			
4	Provides training on behavior modification strategies	F	34	2	-	2.94	0.232	1
		%	94.4	5.6	-			
5	Provides training on strategies to generalize skills in different settings	F	29	7	-	2.81	0.401	5
		%	80.6	19.4	-			
6	Provides training in self-awareness, self-control, and problem-solving strategies	F	29	3	4	2.69	0.668	6
		%	80.6	8.3	11.1			
<b>Mean</b>						<b>2.83</b>	<b>0.183</b>	<b>High</b>

Table 8 shows the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "Instructional Planning and Strategies" and its items with a high degree with a mean range (٢.٨٣). Moreover, item number (4) "Provides training on behavior modification strategies" was ranked the most effective with a mean of (2.94), and the least effective was item number (6) "Provides training in self-awareness, self-control, and problem-solving strategies" with a mean of (2.69).

### Standard 6: Professional Learning and Ethical Practice

**Table (9)**

*The Faculty Members Responses to The 5 Items of This Standard*

N.	Item	Frequency	degree of approval			mean	Std. Deviation	Rank
		Percentage	High	Moderate	Low			
1	Provides knowledge and use of ethical and professional principles to enhance learning	F	27	5	4	2.64	0.683	5
		%	75.0	13.9	11.1			
2	Provides knowledge of the impact of current issues in the field of ASD on professional practice	F	34	2	-	2.94	0.232	3
		%	94.4	5.6	-			
3	Clarify the importance of continuous evaluation-learning and teacher self	F	30	6	-	2.83	0.378	4
		%	83.3	16.7	-			
4	Enhances the acquisition of skills necessary to develop the field of education regarding autism spectrum disorder	F	36	-	-	3.00	0.000	2
		%	100.0	-	-			
5	Seeks to demonstrate the importance of providing guidance and direction to colleagues in the field	F	36	-	-	3.00	0.000	1
		%	100.0	-	-			
<b>Mean</b>						<b>2.88</b>	<b>0.205</b>	High

Table 9 shows the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "Professional Learning and Ethical Practice" and its items with a high degree with a mean range (2.88). Moreover, item number (5) "Seeks to demonstrate the importance of providing guidance and direction to colleagues in the field" was ranked the most effective with a mean of (3.00), and the least effective was item number (1) "Provides knowledge and use of ethical and professional principles to enhance learning" with a mean of (٢.٦٤).

#### Standard 7: Collaboration

**Table (10)**

*The Faculty Members Responses to The 4 Items of This Standard*

N.	Item	Frequency	degree of approval			mean	Std. Deviation	Rank
		Percentage	High	Moderate	Low			
1	Enhances the skill of collaborating with families and colleagues in the field of special education	F	29	3	4	2.69	0.668	1
		%	80.6	8.3	11.1			
2	Defines the models and elements of effective collaboration	F	26	6	4	2.61	0.688	4
		%	72.2	16.7	11.1			
3	Trains to establish positive relationships between families and the community	F	28	4	4	2.67	0.676	3
		%	77.8	11.1	11.1			
4	Trains to involve individuals with ASD and their families in the educational process	F	29	3	4	2.69	0.668	2
		%	80.6	8.3	11.1			
<b>Mean</b>						<b>2.67</b>	<b>0.649</b>	High



Table 10 shows the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "Collaboration" and its items with a high degree with a mean range (٢.٦٧). Moreover, item number (1) "Enhances the skill of collaborating with families and colleagues in the field of special education" was ranked the most effective with a mean of (٢.٦٩), and the least effective was item number (2) "Defines the models and elements of effective collaboration" with a mean of (٢.٦١).

## 12. DISCUSSION

For the first research question, the results indicate the faculty perceive their level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU on "the 7 standards in general" at a high degree. This means that the expert faculty members who prepare the ASD program were very keen to follow the CEC standards to ensure that future teachers have the essential knowledge and skills to work with individuals with an ASD. Teachers in the field of special education need to have specific preparation to meet their students' unique needs.

Moreover, the results suggest that the professional learning and ethical practice standard was ranked the most effective. The reason for this could be that in the field of special education, there are laws, principles, and reference standards through which teachers practice their work. This is all based on philosophies, evidence-based principles, theories, and policies that affect the



special education field. In addition, an important goal in the field of special education focuses on enhancing practice for teachers, organizing services provided to people with special needs and their families, and interacting with them.

On the other hand, the standard of collaboration was the least effective. The reason for this may be that in order for the cooperation between colleagues and families to be successful and effective, there must be knowledge and different learning experiences. In the area of ASD, the teacher needs to collaborate with colleagues, family, and the community to provide for students' needs effectively.

For the second research question, the results indicate the faculty perceptions of the level of application of the CEC standards in the teacher preparation program for Teachers of ASD at TU were high for each standard separately. There were high scores for all items in the learner development and individual learning differences standard. This standard focuses on teachers and the importance of understanding similarities and differences between individuals with and without ASD. In addition, this standard, defines the characteristics, needs, strategies, and different learning styles of individuals with ASD, while also defining the role of the family of autistic children in developing their educational needs.

There were also high scores for all items in the learning environments standard. This standard focuses on modifying and developing safe, inclusive learning environments, and preparing the



strategies and means to implement programs. Additionally, this standard emphasizes the importance of using assistive technology in education. There were also high scores for all items in the curricular content knowledge standard. This standard includes a clear sequence of general and special study levels. Here, we find that teachers are responsible for teaching general curriculum academic subjects and using a variety of specialized curricula, such as independent curriculum. In addition, modifying curricula, teaching methods, tools, and technology according to the needs of the students can make the education process more successful.

High scores were reported for all items in the assessment standard. This standard emphasizes the importance of training educators to use multiple assessment methods and data sources in making educational decisions. This standard is also focused on the development and modification of individual assessment strategies and the importance of providing feedback through collaboration with colleagues and families to ensure non biased, meaningful assessments and decision-making takes place. All items in the instructional planning and strategies standard were high, as well. This standard focuses on training educators on making an educational plan by using evidence based and behavior modification strategies to help students develop their skills.

High scores were reported for all items in the professional learning and ethical practice standard. This standard focuses on faculty members' knowledge of current issues, such as cultural and



social diversity, and how this can impact the field of special education and, specifically, individuals with ASD and their families. Here, we find that the standard seeks to ensure educators acquire skills necessary to advance the field of education. The high scores for all items in the collaboration standard implies that this standard focuses on collaboration with families and colleagues in the field of special education and involving individuals with ASD and their families in the educational process.

This result is in agreement with previous studies, such as the study of Al-Suhaimi and Alzaraa (2021) which found that the level of applying the CEC Standards in individual educational programs for students with intellectual disabilities as perceived by their teachers was a high degree. Similarly, Abusukkar et al. (2020) found the level to which the special education program in the College of Education at Princess Nourah University (PNU) in the Kingdom of Saudi Arabia aligns with the standards of the CEC was high. Research by Al-Ajmi and Al Saifi (2018) found that the professional standards of the CEC are found in the performance of intellectual education teachers to a great degree. Al-Qurni (2019) found the program of autism and behavioral disorders program at King Saud University applied all the seven standards of the CEC to a high degree. Research conducted by Alzaraa (2016) had similar findings. The results indicated the representation of standards of the CEC from the point of view of teachers of children with ASD in the undergraduate program of behavioral disorders and ASD at



Jeddah University was high. Additionally, a study by Obeidat and Al-Duwaidah (2013) found, in general, all the teachers scored high in professional competencies, based on the standards of the CEC.

Conversely, the results of this study conflicted with results of Al-Miqdad (2013). His findings suggested the level of application of the standards of the CEC in the special education program in Jordanian Universities was moderate. More research is needed to substantiate these findings and better understand the discrepancy.

### ***12.1 Recommendations***

1. Design high quality teacher preparation programs in special education.
2. Provide training field supervision for special education teachers.
3. Conduct new studies with other categories of special educators.
4. Conduct further studies on other special education programs.



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