

# Teachers' perceptions and attitudes towards the reality of employing Peer Education Strategy (PES) to develop the Adaptive Behavior Skills (ABS) of their students labeled with Mild Intellectual Disabilities (MID)

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## Summary

The present quantitative study sought to explore the teachers' perceptions and attitudes towards the reality of employing Peer Education Strategy (henceforth referred to as 'PES') to develop the adaptive behavior skills (henceforth referred to as 'ABS') of their students labeled with mild intellectual disabilities (henceforth referred to as 'MID'). Judging from the quantitative nature of the current study which stems from the descriptive sense of its research problem and its relevant issues being addressed, hence the researcher utilized a quantitative data gathering method, i.e., a self-administered questionnaire. Moreover, the sample of the study consisted of (80) teachers (both males and females) who are enrolled in special education teaching positions at the Department of Education in Makkah, Saudi Arabia. Based on the statistical analysis performed on the collected data, represented by responses obtained from the research participants, the following findings were drawn: Firstly, a high level PES's employment on the aforesaid ground was demonstrated by the participants under study. Secondly, it was found that there is a causal relationship between employing the strategy at issue and the development of the ABS of the students within the MID category. This also includes developing the three sub-skills that are relevantly associated with the ABS, namely: the social skills, the academic skills, and the daily life skills, which were incorporated into the questionnaire's items as three independent dimensions that are inseparably linked with the general notion of 'adaptive behavior skills'. Thirdly, with reference to the current study's variables which consisted of: 1) the dependent variable, namely '*the employment of PES in developing adaptive behavior skills for students with MID*' and 2) the independent variables, namely '*gender*', '*educational qualification*', '*years of experience*', '*educational institution*', and '*PES's training courses*', the findings revealed an existence of a variety of relationships, particularly causal relationships, between the study's IVs and DV, and in varying proportions. Finally, appertaining to the scope for further research, the researchers proposed several suggestions and recommendations to other scholars for future studies.

## Keywords:

Peer Education Strategy (PES), Adaptive Behavior Skills (ABS), Mild Intellectual Disability (MID), Strategy-Based Instruction.

## 1. Introduction

In today's globalized world which has been witnessing an unprecedented development and growth

in all fields of science, the field of education has received the most attention. This is because education, without doubt, is considered as a major enabling factor in building civilizations and in enhancing the global modernization process. It also represents the optimal investment of the human capacities as it contributes to the well-being and prosperity of all nations around the world (Newman, 1977). So, in view of the importance of education, a great amount of progress was being made by many countries in efforts to establish well-equipped educational infrastructure worldwide and/or implementing various reforms to their existing educational systems and policies (Shaheen, 2001; Goertz, *et al.*, 1995).

Against this background, the broader perspectives put forward in the relevant literature and in the ongoing discussions in this area suggest that in order to achieve the lofty goals of the education process, a transition from the traditional teaching mode, which is a teacher-oriented teaching approach (Also known as the teacher-centered method) in which knowledge transfer is mainly done by the teacher while the students are passive listeners and recipients of such knowledge, to the modern teaching mode, which is a student-oriented teaching approach (Also known as the learner-centered method) in which students work together with the teachers (who are just facilitators) in order to select teaching objectives and teaching tasks based on authentic problems and previous student knowledge, experience and interests) should be brought about (Ivić, 2016).

As specified by Ebeling (2000), Taylor (1998) and Hawk & Shah (2007), such a transformative and desired change in the teaching mode calls for delivering an efficient and a reformist quality education agenda focused on the implementation of education strategies (also referred to as 'teaching strategies') that represent an inalienable part and an essential component of the educational process.

Pursuant to Kumari (2022), education strategies are defined as unique instructional methods/techniques consisted of principles that are used by teachers in the classroom setting to present the subject matter alongside with the approaches they employ to deliver the course content whilst supporting their comprehension with a view

to achieving the goals and objectives of the lessons successfully, provided that teachers should consider the variation of several influential factors, including the diverse abilities of the students, their diverse personalities' traits, their individuality, the subject taught, the lesson content and the level of its appropriateness to the students' understanding level, the students' various learning styles, their different learning goals and expectations, their number, etc.

By way of explanation, Bohren (2019) stated that teachers should adopt and adapt education strategies through incorporating a variety of effective instructional models into their curricula. Actually, these strategies, which are directed towards the development of the students' learning skills (e.g., problem-solving, critical thinking, decision-making, gathering, classifying and interpreting information, etc.) and cognitive competences, warrant the efficiency of the students' learning and their active involvement through applying the principles of equity and equality in terms of their participation in the teaching process, side by side with their teachers.

It should be noted that nowadays, the field of education in general and the education of students with intellectual disabilities in particular have witnessed a remarkable development which was in conjunction with the modern education strategies assigned to students with intellectual disabilities which resulted from the large number of researches, courses and conferences conducted on this category of students.

In the same vein, the implementation of effective education strategies (Also referred to as the 'Strategy-Based Instruction') plays a significant role in improving the quality of education, improving the students' learning performance, promoting each learner's autonomy, developing their metacognitive awareness, enhancing their lessons' mastery, advancing their learning abilities and willingness, enabling them to gain new and knowledge-based perspectives, increasing their involvement in the classroom as well as their interaction with their peers through developing in-depth collaborative relationships among them (Ebeling, 2000; Taylor, 1998; Hawk & Shah, 2007).

Based on the foregoing, and in light of the fact that students learn differently due to the unique approach of processing information each student has, and for the sake of meeting the variant needs and learning expectations of each individual student, the teacher should consider including and accommodating a variety of education strategies to achieve the overall objectives and goals of the lesson to the maximum extent possible (Barnes, Preziosi & Gooden, 2004).

Despite the fact that there is 'one-size-fits-all' education strategy or a canonical constellation of education strategies that set in stone, however several studies found in the relevant literature, as reported by Nguyen & Gu (2013),

addressed a variety of effective and high-impact education strategies that teachers can apply to a diverse of learning needs presented by a wide variety of students. One of the most popular and effective education strategies, referred to above, is the Peer Education Strategy. PES is defined as one of the cooperative learning strategies that is based on the learners' cooperation and interaction with each other. This strategy is applied by the teacher through forming heterogeneous learning groups and encourage them, as much as possible, to work together for a period of time - ranging from one session up to a number of sessions- in order to achieve a set of predetermined learning objectives (Shaaban, 2001).

Admittedly, PES has a remarkable impact on enhancing the academic skills of the students with disabilities and ordinary students equally. Through the PES's work mechanism, according to Nguyen (2013), students are trained to perform and complete a customized skill based on the principle of collegiality, with the aim of providing a helping hand and mutual support among students and their teacher who both exchange the roles of giving feedback and carrying out mutual observation during actual teaching for the sake of improving the performance of a particular skill and acquiring new skills with a high level of performance. In the same vein, Abdul Karim (2015) indicated that the PES plays a significant role in developing the team-work skill among the students with intellectual disabilities through assisting them to establish and be committed to the principle of cooperation with their peer ordinary students which represents a necessary educational and social requirement because of its noticeable impact on these students.

Taking into consideration the primary purpose of the current study, which is identifying the teachers' perceptions and attitudes towards the reality of employing Peer Education Strategy to develop the adaptive behavior skills of their students labeled with mild intellectual disabilities, it is, therefore, crucial that a correlation between the PES and its impact in developing the ABS of the students with MID should be made.

As a starting point, it should be pointed out that the term 'intellectual disability' (ID) is defined by the American Association on Intellectual and Developmental Disabilities (2022), Boat & Wu (2015), and Schaepper, et al., (2021) as a neuro-developmental disorder that is mainly caused by certain genetic conditions, injury, disease, toxic exposure, complications during pregnancy, brain malformations, complications during labor and birth, serious head injury, stroke, maternal disease, etc. as for its diagnosis, a person is labeled with ID if he/she is mainly characterized by noticeable symptoms of significant limitations, deficits, and impairments in two areas: 1) the cognitive functioning: which refers to the general mental capacity, such as learning, reasoning, problem solving, etc., and 2) the adaptive behavior: which refers to the collection

of a. conceptual skills: such as language, literacy, reading, communication, etc., b. social skills: such as problem solving and following social rules, and c. practical skills: such as transportation, healthcare, feeding, dressing, and other normal activities performed on a daily basis. Hence, impairments in the adaptive behaviour skills impact the maturity of those who suffer from ABS's issues. Besides, their social and practical competencies that are required to meet their daily living tasks, the way they act within their homes and communities, being independent members of their societies, their ability to take personal responsibility, their ability to meet the demands of their surrounding environments, and their ability to make age-appropriate choices are all impacted due to the above mentioned ABS's issues (ibid).

In fact, an emphasis must be put on the educational difficulties faced by students with ID throughout the duration of their study path which result from their poor adaptation with various educational situations they go through. This, accordingly affect their emotional compatibilities, their personal traits, and more substantively their adaptive behaviour skills. So, the limitations of the adaptive behavior skills concerning the students with ID is a problematic issue that must be tackled and examined thoroughly (Al-Ajami & Al-Talasi, 2016).

Going back to the impacts of ID, it should be further noted that ID limits the person's ability to learn at an expected level (usually slower or different than a typically developing person) and limits his/her mastery of skills necessary to live independently. From another perspective, a person with ID meets these criteria: he/she score below 70-75% in the IQ test and he/she starts to experience common symptoms at a young age (most probably before the age of 18), bearing in mind that the manifestation of these symptoms depend on the severity of the person's disability. On contrary, although ID is a lifelong incurable condition, however when receiving early and continuous-based interventions can help people with ID learn to improve their functioning over time (ibid).

Moreover, Johnson (2019) stated that ID is divided into four levels, namely: 1) mild ID, 2) moderate ID, 3) severe ID, and 4) profound ID. These level are identified based on the individual's IQ test as follows: Mild ID (IQ between 50 and 70), Moderate ID (IQ between 35/40-50/55), Severe ID (IQ between 20/25-35/40), and Profound ID (IQ below 20/25). Similarly, ID levels can be also identified based on the cognitive ability test, adaptive behaviour test, and through measuring the degree of the individual's social adjustment. Further, it should be emphasized that the Mild ID, which represents the main interest of the current study, has the following symptoms: 1) taking longer to learn to talk, 2) having problems with reading and writing, 3) having an IQ range of 50 to 69, and 4) social immaturity.

So, proceeding from the reality that students with mild intellectual disability, in addition to other types of

intellectual disabilities, are more vulnerable to experience adaptive behavior skills' issues that eventually cause them an endless life-affecting sufferings, particularly in matters related to the shortcomings of their personal and social practices, which impede their opportunities to adapt and integrate into their learning environments and accordingly marginalize them and deprive them of any chance of improving their ABS (Al-Ezaby, et al., 2015; Al-Sarhan, 2014), and in light of the great amount of attention that has been paid globally to the necessity of offering individuals with ID, who represent an integral part and one of the essential components of our societies, an adequate and effective special education through which viable strategies, such as the PES, are employed in order to strengthen their capacities to achieve a qualitative progress regarding their cognitive functioning skills and adaptive behaviour skills (Al-Rousan, 2017; Al-Sarhan, 2014; Ashmawi, 2015; Al-Ajami & Al-Talasi, 2016). As a final outcome of all of the foregoing, primary concern of the current study was centered on identifying the reality of employing PES in developing the ABS of the students with MID. Precisely, the study sought to answer the following research questions:

1. *What is the reality of employing the PES in developing the adaptive behavior skills of the students with MID from the perspective of their teachers?*
2. *Are there statistically significant differences at the significance level ( $\alpha \leq 0.05$ ) regarding the reality of employing PES in developing the adaptive behavior skills of the students with MID from the perspective of their teachers due to the following variables: (gender, educational qualification, years of experience, educational institution, and PES's training courses)?*

## 2. Previous studies

The researchers reviewed a number of studies related to the reality of employing Peer Education Strategy in developing adaptive behavior skills for students with mild intellectual disabilities from the perspective of their teachers, which were presented according to their recentness as follows:

Ibrahim, et al., (2020) conducted a study which aimed to reveal the effectiveness of implementing Peer Education Strategy to improve some social skills of children with intellectual disabilities who have the predisposition to learn and who are enrolled at integration kindergartens. The study sample consisted of (15) children, including (5) normal children aged between (5) to (6) years old, and (10) children

with intellectual disabilities aged between (8) to (11) and who have the predisposition to learn and who scored (65) to (69) in the intelligence quotient (IQ). In addition, the study adopted a set of research tools, including the social skills scale for Children with intellectual disabilities who are who have been capable of incorporated into integrated learning and training program based on the Peer Education Strategy. The findings of the study revealed that there were statistically significant differences between each of the mean scores scale of the experimental group children in both the pre and post measurement on the social skills scale in favor of the post measurement. The findings of the study also indicated that there are differences between the mean scores of the children of the experimental group and the control group in the post measurement on the social skills scale in favor of the experimental group.

Al-Ajmi & Al-Talasi (2017) conducted a study that aimed at examining the effectiveness of Peer Education Strategy in imparting the skill of orientation and movement for students with multiple disabilities. The quasi-experimental approach was implemented. The study population was represented in the Multiple Disabilities Program at the Al-Noor Institute for the Blind in the Riyadh region. A sample of (3) students with multiple disabilities was trained by (3) people with visual disabilities only. The researchers used graphs, a form for recording observations, and a form for recording responses as a tool for the study. The findings of the study demonstrated the effectiveness of Peer Education Strategy in acquiring and retaining the skill of orientation and movement for students with multiple disabilities, and then disseminating this skill.

Abboud (2016) conducted a study which aimed to find out the attitudes of the Saudi teachers towards implementing Peer Education Strategy in teaching students with 'attention-deficit/hyperactivity disorder' (ADHD) in Saudi Arabia. The study population consisted of teachers in the Riyadh region. The sample of the study consisted of (538) Saudi teachers working in public schools who participated in the study through answering the survey questionnaire which was the research instrument adopted for data collection from the enrolled participants. The findings of the study revealed that Saudi teachers realized the benefits of implementing Peer Education Strategy. Yet, the employment of this strategy is still limited. On contrary, the enrolled participants were uncertain of the obstacles that they faced whenever they employed Peer Education Strategy. The findings revealed the presence of statistically significant differences in teachers' attitudes towards the gender of teachers, the teaching situation in schools, and the previous teaching experiences of teachers regarding the employment of (PES).

Tawfiq (2014) carried out a study which aimed to reveal the effectiveness of using Peer Education Strategy in developing the ability of self-management among students with intellectual disabilities who can be taught integrated

with their normal peers. Relying on the quasi-experimental approach, the study sample consisted of (12) students with intellectual disabilities who have the predisposition to learn. A set of research tools were employed, among which was a training program based on the peer education approach. The findings of the study indicated that Peer Education Strategy is effective in developing self-management among students with intellectual disabilities.

Likewise, Al-Bajhan (2013) conducted a study which aimed to identify the effectiveness of Peer Education Strategy in developing arithmetic skills for students with intellectual disabilities in the intermediate stage. The study sample consisted of (12) students, including (4) ordinary students and (8) students with intellectual disabilities aged between (14) to (18) years old and particularly and who have the predisposition to learn. The study utilized the experimental design approach. The findings of the study revealed the effectiveness of Peer Education Strategy in the field of developing and collecting multiplication skills of (3) students of the experimental group, who were able to reach the required educational level in all of the three groups assigned to them. On the other hand, one student was able to reach the required level in each two of all three groups. Furthermore, as for the control group, two students were able to reach the required level in all three groups, while one student was able to master the level of two groups out of all the three groups and another student was able to master one of the three assigned groups.

In the same context, Hawass (2013) conducted a study which aimed at identifying the effect of a program based on Peer Education Strategy in developing some language skills and its effect on acquiring some social skills among slow learners in kindergarten. To achieve the objective of the study, the researcher used the following tools: Goodenough-Harris (1926) Drawing a Man Test (GHDAMT), and the slow learner's observation form as well as the speaking and reading skills test (prepared by the researcher). The findings of the study showed that there were statistically significant differences between the average scores of the children of the experimental group and the scores of the control group in the test of speaking skills, preparation for reading and the social skills scale, in applying the post-test in favor of the scores of the experimental group.

### 3. Methodology

The nature of the current study necessitated the use of the descriptive analytical method for its relevance to the purposes of the study which is identifying the reality of using PES in developing adaptive behavior skills for students with MID. The study population was represented by the total of (168) male and female teachers of students with ID in the city of Makkah in Saudi Arabia. The number

of the population of the study was determined based on the statistics of the Special Education Department of the Makkah Education Department for the year 2019/2020. The sample of the study consisted of (80) male and female teachers of students with mild intellectual disabilities, who were chosen randomly.

The nature of the current study necessitated the adoption of the descriptive analytical method due to its relevance to its objectives, i.e., identifying the reality of using Peer Education Strategy in developing adaptive behavior skills for students with mild intellectual disabilities. The population of the study is consisted of (168) male and female teachers of students with intellectual disabilities in the city of Makkah, Saudi Arabia. The number of the population was determined based on the statistics of the Special Education Department of the Makkah Education Department for the year 2019/2020. Out of the total number of the previously stated population, a sample of (80) male and female teachers of students with mild intellectual disabilities was selected randomly.

The researchers employed a questionnaire as the main research instrument to collect the data from the study participants. The questionnaire consisted of (30) items that measured the reality of using Peer Education Strategy in developing the adaptive behavior skills among the students with mild intellectual disabilities that are distributed over three main dimensions. The questionnaire's face validity was verified through presenting it to a committee consisting of (10) specialized arbitrators who are faculty members in special education specializations at the Saudi universities and teachers of students with intellectual disabilities in Saudi schools in order to ensure the suitability of the research instrument (the questionnaire) and its ability to achieve the research objectives. It is worth mentioning that the research questions and objectives were also submitted to the committee alongside with the questionnaire. Eventually, and based on the notes and amendments provided by the committee members, the questionnaire was modified.

The internal consistency validity of the adopted research instrument was also verified through applying the questionnaire on a pilot sample consisted of (30) participants from outside the targeted sample, in order to calculate the values of Pearson's correlation coefficients regarding the relationship between the questionnaire's paragraphs and the dimension to which they belong. Moreover, the Cronbach's alpha coefficient was also calculated, as an indicator of the internal consistency validity of the questionnaire's items. The total reliability coefficient (Cronbach's Alpha) has reached (0.963%), which is considered very high and thus it indicates the reliability of the adopted research instrument. For more clarification, the reliability coefficient was measured using the split half coefficient method, where the reliability coefficient (the total split half reliability

coefficient) has reached (0.948%), which is considered very high and thus indicates the reliability coefficient of the adopted research instrument.

On the whole, the collected data were analyzed using the Statistical Package for Social Sciences (SPSS), through which the correlation coefficient (Pearson), Cronbach's Alpha, the split half reliability coefficient using Spearman's correlation coefficient, the frequencies, means, and standard deviations were used to answer the study's first research question. Conjointly, a multivariate analysis of variance of the impact of the independent variables on the dependent variable was carried out. In other respects, Post Hoc comparisons and multiple comparisons were carried out using Scheffe's Method, particularly the analysis of variance to account for linear regression analysis.

#### 4. Findings

The findings of the data analysis revealed that the level of employing Peer Education Strategy among the study enrolled participants is 'High', with an arithmetic mean of (4.03%) for the research instrument as a whole. See Table (1) below for more clarification:

**Table (1).** The arithmetic means and standard deviations of the research instrument's dimensions in a descending order according to the arithmetic means of these dimensions ( $n = 80$ ):

The dimension's No.	The dimensions	Arithmetic means	Standard deviations	Rank	Level
1.	Academic skills	4.19%	0.82%	1	High
2.	Social skills	4.15%	0.63%	2	High
3.	Daily life skills	3.77%	0.59%	3	High
<b>The research instrument's dimensions as a whole</b>		4.03%	0.57%	-	High

As shown in the above Table (1), the analysis of the findings demonstrated that the third dimension (*academic skills*) had been ranked first with an arithmetic mean of (4.19%) and with a 'High' level, followed by the second dimension (*social skills*), which had been ranked second with an arithmetic mean of (4.15%) and with a 'High' level, and finally the first dimension (*daily life skills*), which had been ranked third with an arithmetic mean of (3.77%) and with a 'High' level.

As for the second research question, which aimed to determine whether there are statistically significant differences at the significance level ( $\alpha \leq 0.05$ ) regarding the reality of employing Peer Education Strategy in developing adaptive behaviour skills for students with mild intellectual

disabilities from the perspective of their teachers due to the following variables: (gender, educational qualification, years of experience, educational institution, and Peer Education Strategy’s training courses), the below Table (2) shows the findings derived from the enrolled participants’ responses:

**Table (2).** *The three-way analysis of variance concerning the impact of (gender, educational qualification, years of experience, educational institution, and the Peer Education Strategy’s training courses) on the reality of employing Peer Education Strategy in developing the adaptive behavior skills of the students with mild intellectual disabilities from the perspective of their teachers:*

SoV	Domains	SS	DF	MS	F	SS
(G)  L= 0.107%  P= 0.071%	Daily life skills	2.079 %	1	2.079 %	6.546 %	0.013 %
	Social skills	1.069 %	1	1.069 %	3.617 %	0.061 %
	Academic skills	0.100 %	1	0.100 %	0.168 %	0.683 %
(EQ)  W= 0.996%  P= 0.964%	Daily life skills	0.053 %	1	0.053 %	0.168 %	0.683 %
	Social skills	0.072 %	1	0.072 %	0.243 %	0.624 %
	Academic skills	0.084 %	1	0.084 %	0.141 %	0.708 %
(YoE)  W= 0.764%  P= 0.004%	Daily life skills	0.223 %	2	0.111 %	0.351 %	0.705 %
	Social skills	3.862 %	2	1.931 %	6.530 %	0.002 %
	Academic skills	1.434 %	2	0.717 %	1.203 %	0.306 %
(EI)  W= 0.822%  P= 0.033%	Daily life skills	1.499 %	2	0.750 %	2.361 %	0.102 %
	Social skills	3.795 %	2	1.897 %	6.416 %	0.003 %
	Academic skills	6.089 %	2	3.044 %	5.109 %	0.008 %
(TCPPE S)  W=	Daily life skills	0.929 %	2	0.464 %	1.462 %	0.239 %
		1.224	2			

0.853%	Social skills	%		0.612 %	2.070 %	0.134 %
P= 0.085%	Academic skills	4.081 %	2	2.041 %	3.425 %	0.038 %
Error/ Residual	Daily life skills	22.543 %	71	0.318 %		
	Social skills	20.995 %	71	0.296 %		
	Academic skills	42.305 %	71	0.596 %		
Total	Daily life skills	27.902 %	79			
	Social skills	31.798 %	79			
	Academic skills	53.367 %	79			

**Notice:** SoV: Source of Variance; G: Gender; EQ: Educational Qualifications; YoE: Years of Experience; EI: Educational Institution; TCPPEs: Training Courses for Peer Education Strategy; L: Lawley-Hotelling Trace; P: P-value/Probability Level; W: Wilks' lambda; SS: Sum of Squares; DoF: Degrees of Freedom; MS: Mean Squares; F: F-value/ F-statistic; SS: Statistical Significance.

As shown in the above Table (2), the analysis of the findings demonstrated that there were no statistically significant differences ( $\alpha \leq 0.05$ ) due to the effect of the ‘gender’ variable on the (social skills) and academic skills) dimensions, while there were statistically significant differences ( $\alpha \leq 0.05$ ) due to the effect of the gender in the (daily life skills) dimension. The differences were in favor of the female study participants. Further, there were no statistically significant differences ( $\alpha \leq 0.05$ ) due to the effect of educational qualification variable on all of the three previously stated dimensions.

The findings have also demonstrated that there were no statistically significant differences ( $\alpha \leq 0.05$ ) due to the effect of the ‘years of experience’ variable on the (daily life skills) and (academic skills) dimensions. Similarly, there were statistically significant differences ( $\alpha \leq 0.05$ ) attributed to the effect of the ‘years of experience’ variable on the (social skills) dimension and in favor of (more than 10 years) and (less than 5 years) age categories. In addition, there were no statistically significant differences ( $\alpha \leq 0.05$ ) due to the effect of the ‘educational institution’ variable on the (daily life skills) dimension. On contrary, there were statistically significant differences ( $\alpha \leq 0.05$ ) due to the effect of the ‘educational institution’ variable on the (social

skills) and (academic skills) dimensions and in favor of the (special education centers) sub-category.

Within the same context, the findings have further pointed out that there were no statistically significant differences ( $\alpha \leq 0.05$ ) attributed to the effect of the 'Peer Education Strategy's training courses' on the (daily life skills) and (social skills) dimensions. On contrary, there were statistically significant differences ( $\alpha \leq 0.05$ ) due to the effect of the 'Peer Education Strategy's training courses' on the (academic skills) dimension and in favor of (4 courses and more) sub-category.

## 5. Discussion of the findings

In terms of the first research question, the findings of the study concluded that the level of the employment of Peer Education Strategy in developing the adaptive behavior skills for students with mild intellectual disabilities in the city of Makkah, Saudi Arabia, is 'High'.

According to the researcher, the above-mentioned finding is attributed to the widespread implementation of Peer Education Strategy, alongside its associated sub-strategies, by the teachers concerned. In fact, this came as a direct response to the high priority given by the special education's relevant authorities at the Saudi Ministry of Education to maintain a qualified workforce in the special education sector through integrating its teachers into training courses and programs which aim, in their entirety, to support the teachers' professional development, improve their teaching quality, develop their pedagogical competency, and hence achieve their overarching goal which is ensuring that students with disabilities receive specialized instruction that is designed to meet their unique learning needs. In fact, at the core of the ministry's pursuit of achieving the ultimate goal of empowering and enabling special education teachers, and in light of the various ways and means devoted to meet such a target, a special emphasis has been always placed by the Ministry on the need for the teachers to employ a repertoire of high-impact education strategies that have been proven to work efficiently and effectively to fulfill the wide variety of learning needs related to students who have a wide range of learning, mental, emotional, and physical disabilities. Actually, among the vast amount of the well-known relevant strategies, the 'Peer Education Strategy' lies at the heart of the highly recommended strategies that the teachers, as noted previously, are strongly urged by the Saudi Ministry of Education to employ, particularly for the students with intellectual disabilities. Forsooth, the importance of this particular strategy emanates from the fact that it has extraordinary potentials in developing the various shortcomings of students with disabilities in general and students with intellectual disabilities in particular.

On the sidelines of the aforementioned training courses and programs, the researchers emphasized the

necessity of addressing the fact that certain special education curricula are delivered at the undergraduate university study's level for students pursuing a degree in special education and disabilities at the Saudi universities. Indeed, these supportive curricula taught to undergraduates majoring in special education make a substantial contribution in enhancing the advanced preparation and pre-qualification of the future teachers and professionals in this critical scientific field. On a related note, these assigned curricula also offer a detailed explanation and discretion about various education strategies assigned for students with learning disabilities, among which is Peer Education Strategy. As a result, they enrich the undergraduates' aspects of knowledge, awareness, and cognition regarding this strategy, side by side with other strategies, and its significant role in teaching various skills for students with intellectual disabilities, among which is the adaptive behavior skill. So, while serving as a complementary part of the overall pre-service training process assigned most importantly for special education undergraduates (before they are enrolled in teaching), yet these curricula are still of considerable practical relevance to the subsequent in-service training needed by the already in-service teachers (those who have already completed their course of study, received their academic degree, and are now teachers).

One area that should be stressed is that the above stated findings are in line with the findings derived from the existing literature relevant to the current study's topic. Particularly, they are in agreement with Ibrahim et al (2020) study's findings which confirmed the efficiency of employing Peer Education Strategy in developing social skills among students with intellectual disabilities. The revealed findings of the current study also correspond with the findings of Al-Ajami & Al-Talasi's (2017) study which authenticated the effectiveness of Peer Education Strategy in imparting and retaining the skill of orientation and movement for students with multiple disabilities and their retention. Equivalently, the findings are in agreement with Tawfiq's (2014) study which substantiated the adequacy of the peer-based program in developing self-management among students with intellectual disabilities who are able to be integrated in the educational process alongside regular students. last but not least, the current findings are in consonance with the findings of other relevant studies conducted by Al-Bajhan (2013) and Al-Hawwas (2013) which both asserted the potency and efficaciousness of employing Peer Education Strategy in developing the arithmetic skills and some language and social skills for students with intellectual disabilities.

In terms of the second research question, the findings of the current study concluded the following:

Firstly, the 'gender' variable does not conclusively and categorically affect the reality of employing Peer Education Strategy to develop the adaptive

behavior skills for the students with mild intellectual disabilities in the city of Makkah, Saudi Arabia, particularly with respect to the (social skills) and (academic skills) study's dimensions. However, 'gender' was found influential, particularly in respect to the study's third dimension. i.e., the (daily life skills), which can be inferred from the higher responses' rate of the female study participants that exceeded, in this particular regard, the responses' rate of the male study participants. It is believed by the researchers that such a higher responses' rate is attributed to the fact that female participants, as mothers, perceived the issue of teaching children, especially if they are intellectually disabled, the daily life skills as a necessity and as one of the core roles of motherhood. This is also supported by the fact that throughout Arab society; mothers are seen as the main providers of daily care for their children. Hence, the emotional-based awareness and realization of Arab females concerning the learning of the daily life skills by their intellectually disabled children is often higher than Arab males. On the other hand, the above-stated finding is in consonance with the findings of Abboud's (2016) study which indicated that there are differences in terms of employing Peer Education Strategy for the students with intellectual disabilities due to the gender variable.

Secondly, the 'academic qualification' variable was not found influential in terms of the reality of employing Peer Education Strategy to develop the adaptive behavior skills of the students under study, particularly with respect to the study's entire dimensions (social skills), (academic skills), and the (daily life skills), and within the realm of the total degree. In fact, it is believed by the researchers that this finding is attributed to the fact that the university courses of all levels that are taught to undergraduates majoring in special education, side by side with the pre-service preparation programs delivered for especial education teachers, have both provided successfully an equal specialized and intensive training to the majority of the teachers concerned, especially about the strategies assigned for teaching students with intellectual disabilities, including Peer Education Strategy, which resulted in attaining a similar level of knowledge and experiences regarding this strategy and the appropriate mechanism of its employment.

Thirdly, the 'educational institution' variable was also found uninfluential in terms of the reality of employing Peer Education Strategy to develop the adaptive behavior skills of the students under study, particularly with respect to the (daily life skills) study's dimension. On contrary, the 'educational institution' was found influential, particularly with respect to the study's other two dimensions, namely the (social skills) and the (academic skills). According to the researchers, this is traceable to the fact that the special education centers have students with intellectual disabilities or other disabilities, which make this category of students

feel their presence in a safer environment as a result of the convergence of their abilities level with the abilities of their colleagues in these centers. Besides, the low level of their exposure to rejection and failed social interaction experiences in these centers leads to a decrease in the risks of having failure experiences and other sources of vulnerability they may be exposed to which are caused by the variation in the level of their abilities.

Lastly, the 'Peer Education Strategy's training courses' variable was found uninfluential in terms of the reality of employing Peer Education Strategy to develop the adaptive behavior skills of the students under study, particularly with respect to the (daily life skills) and the (social skills) study's dimensions. Nonetheless, the aforesaid variable was found effectual in terms of the (academic skills) dimension and in favor of the (4 courses and more) sub-category. As reported by the researchers, such influence is attributed to the fact that the greater the number of training courses offered to the teachers of students with intellectual disabilities in academic fields, the higher their level of competency in applying the 'Peer Education Strategy's training courses' to their students. By way of explanation, these courses enable teachers to understand and notice the detailed aspects related to this strategy and the best ways to implement it effectively while teaching students with intellectual disabilities.

## 6. Conclusion

As previously mentioned in the abstract, the current research study aimed to explore the teachers' perceptions and attitudes towards the reality of employing PES to develop the ABS of their students labeled with MID. In conclusion, the findings of the study indicated a high level PES's employment which is ascribable to its significant influence in developing the ABS and the ABS's associated sub-skills of the students with MID. Furthermore, the findings of the study indicated that there is a variety of causal relationships between the study's IVs and DV, and in varying proportions. For further clarification in this regard, it was found that the independent variable of 'gender' has a significant influence on the above highlighted DV, particularly with respect to one of the ABS's associated sub-skills, namely the 'daily life skills'. In fact, this influence was at a higher rate comparing to the influence of the ABS's other associated sub-skills, namely the 'social skills' and the 'academic skills'. Besides, it was found that the independent variable of 'academic qualification' does have a significant influence on the study's DV, including the entire ABS's associated sub-skills. Likewise, the independent variable of 'educational institution' was also found uninfluential on the study's DV, particularly with respect to one of the ABS's associated sub-skills, namely the 'daily life skills'. Nonetheless, this



influence was at a higher rate comparing to the influence of the ABS's other associated sub-skills, namely the 'social skills' and the 'academic skills'. Lastly, the findings of the study pointed out that the independent variable of 'PES's training courses' was found uninfluential on the study's DV, particularly with respect to a two of the ABS's other associated sub-skills, namely the 'daily life skills' and the 'social skills'. Notwithstanding, the aforesaid independent variable was found effectual on the study's DV, particularly with respect to a the ABS's third associated sub-skill, namely the 'academic skills'.

Correspondingly, and in a related matter, it is highly recommended by the researchers to conduct more empirical research studies on the employment of effective teaching strategies, other than the PES addressed by the current study, while ensuring the involvement of a larger number of participants that outnumber those enrolled by this study and from different countries. Over and above, it is advisable that the suggested future studies, building upon the findings of the relevant studies existed in the relevant literature, should remain comprehensively and inclusively focused on the association of employing the entire constellation of the adequate and competent teaching strategies -in the field of special education- with the development of the adaptive functional skills, including the sum total of conceptual, social, and practical skills (e.g., the collection of adaptive cognitive and behavioral skills), that are needed and required the most by students with intellectual, developmental, emotional, physical, learning, mental, sensory, behavioral, etc., disabilities and disorders, in order to enable them to live independently and to function as much autonomously and effectively as possible in their daily lives, whether at home, at school, or in the community. To summarize, these specialized skills are of great importance and necessity as they help disabled students to meet their personal needs (care for themselves), to meet the natural and social demands of their surrounding environment (gain social competencies), and to function properly at the academic level (in the midst of their pursuit of learning).

Finally, in light of the conclusions reached in the present study, the following suggestions were made by the researchers: It is preferable to offer a wide range of specialized training courses and programs on how to adopt effective and appropriate means, methods, and techniques by special education teachers to employ Peer Education Strategy in teaching their students with MID. It is also advantageous to reduce the special education teachers' workload (teaching loads and assignments) as with reduced class-loads, teachers will have the sufficient time to employ the PES innovatively and successfully in supporting the learning process of their students with MID and ensure that they receive a quality specialized education designed to meet their unique educational needs. Finally, a procedural manual for special

education teachers regarding the PES is suggested to be prepared by the concerned special education departments. This manual should contain the definition, goals, characteristics, the necessary conditions and steps needed for the implementation of the PES. In the same vein, explanatory trial classes, through which PES is employed to teach different types of study materials, are suggested to be made available.

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