Inclusive education for students with severe or profound and multiple learning difficulties: Identification of influencing factors and challenges

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In the study reported on here we examined the extent of pre-service teachers' supportiveness for educational inclusion (EI) of students with severe or profound and multiple learning difficulties (SPMLD) in order to identify their attitudinal predictors, as well as the challenges faced in such a process. An attitudinal survey with 33 items was developed to collect data from 542 participants. The results show that the attitudes/beliefs of pre-service teachers (ABpST) regarding inclusion were moderate to positive and strengthened across the teachers' knowledge and experiences. However, some variations, based on their characteristics and study constructs were revealed. The findings also illustrate the combined effects of practical knowledge and courses, besides teaching and working experiences in shaping ABpST attitudes towards inclusion of SPMLD students. The implications of these results for educators and national education institutions and other international universities are discussed.

Keywords: attitude/beliefs; educational inclusion; pre-service teachers; SPMLD students

Introduction
The values, attitudes/beliefs, and cultural practices and behaviour of the community (Troxclair, 2013), as well as political economic circumstances have influenced the understanding of the needs of students with special education needs, including their inclusive settings (Ngcobo & Muthukrishna, 2011). In Jordan there has been great confusion between researchers and practitioners (i.e., managers and teachers) about what inclusive education, known as education inclusion (EI), is (Amr, 2011). This is due to the lack of agreement on a unified pedagogy concept of the integrated model for disabled students in several developed countries (Al shoura & Ahmad, 2014). Locally, practitioners and researchers who appear to be in favour of EI practices have indicated that they frequently have "exclusion items" restricted to their integrated arguments. In general, EI is a modern trend that refers to the inclusion of adults and young children with disabilities to receive their education with their regular peers regardless of their differences and background (Al Jabery & Al Khamra, 2013; Yaraya, Masalimova, Vasbieva & Grudtsina, 2018). For the purpose of our study, the term "educational inclusion" (EI) is used to define or describe a more specific provision of opportunities for SPMLD students within inclusive school settings.

In developing countries such Jordan, many study result show that preservice teachers are still not prepared and trained in EI (Al Jabery & Al Khamra, 2013; Al Qaryouti & Al Shukaili, 2015) and they lack adequate knowledge and experience relating to disabled learners. Previous studies have claimed that ABpST can be substantial and useful in integrating learners with a high level of special needs into general classes. Although a number of studies have been conducted in the area of ABpST in Jordan (Al-Zyoud, 2011; Fayez, Dababneh & Jumiaan, 2011), none of these studies have specifically inquired or focused on the influences of potential factors of ABpST or the challenges faced by the SPMLD learners. Based on the above, there is a need to fill this gap by conducting an in-depth examination of the new educational policies and practices before implementation thereof.

Jordan Context
Special needs education programmes (SNEP) in Jordan have made good progress since the first education act for the Welfare of Disabled People (WoDP) (12_1993) came into effect in 1993 (Melhem & Isa, 2013). This enactment has been reauthorised twice to ensure the provision and support of organised and EI services for disabled learners. As SNEP expanded the need for more influential comprehension, modern law began to become explicit, resulting in the Act on the Rights of Disabled-People (RoDP), in 2007 (Al shoura & Ahmad, 2014), which currently constitutes the benchmark for inclusive and special education practices. Pivotal changes in this enactment involved an emphasis on EI and the adoption of a wider variety of special education disability categories for schools and universities (Amr, 2011). Unfortunately, although the various provisions of the local law supporting EI was passed in 1993, it has not been practiced in the real world with disabled children (Melhem & Isa, 2013).

Currently, there is a strong emphasis on carrying out EI policies for student diversity (Ministry of Education [MoE], 2018). The number of adults and young learners with high and varied levels of educational needs being integrated in the regular main-stream classrooms increased from year to year across public schools see e.g. Al-Zyoud (2011). The increases in the integrated classroom settings have gradually run for SPMLD learners (MoE, 2018), although this prevalence differs slightly based on sub-categories of disabilities. It might

reflect a shift in attitude and support regarding favouring EI practices as legitimate rights for those with disabilities. In fact, there are approximately 11% disabled learners in Jordan diagnosed with SPMLD (Yahia, 2006). As part of the increase in the number of those children in EI classes, the percentages of SPMLD learners in those classrooms has also risen in the last decade and is now estimated to be at 15 to 20% (Al-Zyoud, 2011).

Theoretical Framework

Triandis (1971) defines the concept "attitudes" as the ideas (or thoughts) that reflect feelings and affect behaviours regarding a particular object or on surrounding things (fact or state). Attitudes are divided into three components: a) cognitive, which refers to a person's beliefs about an object; b) affective, which refers to a person's feelings about an object; and c) behavioural, which refers to a person's predisposition to behave or respond towards an object in a particular manner. Triandis (1971) reports that the behavioural component is an outcome of the affective and cognitive components. All previous attitudinal components are interactive and influence the way in which an individual perceives the object or thing through the information he/she has about him-/herself and the environment. It has been argued that individuals' attitudes can be formed primarily or exclusively on the basis of any one of the three elements (Al-Zyoud, 2011). Consequently, individuals' specific responses toward objects do not mean a combination of the three components (cognitive, affective and behavioural). A person may hold a certain belief or knowledge towards the object but may never engage in overt behaviour in that regard. For instance, in EI, educators may believe that students with SPMLD should be socially merged into the regular educational environment; at the same time, educators may not engage with selecting educating tasks that those disabled students can do. In this sense, the consistency issue that individuals (teachers) tend to voice the same degree of evaluation of an attitude object through the previous attitudinal components, is limited.

For the purpose of this investigation, we employed the three critical components of attitude because of its possibility to reflect the complexity of teachers' attitudes and beliefs towards EI. The three components of attitude provide a holistic approach of understanding (Al Qaryouti & Al Shukaili, 2015) and a dynamic conceptual framework, which affords a range of different, and sometimes contradictory perspectives, without regard to whether the kinds prove separable in suitable statistical data analysis or interpretation with several variations and contexts (Al-Zyoud, 2011).

As indicated earlier, teachers shape attitudes/beliefs about disability, disabled learners, and ultimately regarding EI, depending on their relevant knowledge, training and experiences with disabled students, a student's disabilities and characteristics, and the factors in the school environment. Thus, the attitudes of teachers are reflected in their performance and behaviour in the educational settings and in their interactions with the students. For example, teachers who have positive acceptance of EI have greater confidence in their abilities and commitment to meeting the needs of student diversity by accommodating educational methods and environment (Al-Zyoudi, 2006; Ngcobo & Muthukrishna, 2011). Meanwhile, teachers with negative attitudes were found to have lower effectiveness and performances in addition to less expectations for teaching those students. Negative or unwelcome attitudes are likely to interfere with such disabilities and their education in EI (Al-Zyoud, 2011). Consequently, it is important to study the influential factors in pre-service and in-service education programmes that facilitate a teacher's development of the requested inclusive attitudes.

Bataina and Ruwaili (2015) argue that pre-service teachers' specialised preparations at university can influence their beliefs and abilities to work with and/or teach disabled students. Therefore, if teachers complete their university studies without developing positive attitudes for implementing EI practices, the quantity and quality of provision provided to the students would be negatively impacted. However, in developing nations as Jordan, the available dataset on pre-service training at university level indicate that the majority of preservice preparation models do not include inclusive training for these teachers, but only theoretical knowledge for students who study special education. (see e.g., Al Jabery & Al Khamra, 2013). Sze (2009) argues that there is an important and strong link between pre-service teachers' attitudes, practical knowledge or training and teaching and working experiences they have received. Among the identified factors, teachers' exposure and experience with disabled learners is considered the most influential factor regarding adapted teaching approaches – a notion supported in a study conducted by Amr (2011).

Although there is generally a paucity of research on pre-service teachers' attitudes regarding disabled learners and EI in Jordan, according to Al Qaryouti and Al Shukaili (2015), educators do not respond positively to disabled students within the adapted education approaches. Moreover, Yahia (2006) concludes that teachers display strong misconceptions regarding students with complex learning and additional support needs. Teachers tend to have a low-level of

expectations of those students within the EI setting. This might appear in teachers' different treatment of (or dealings with) SPMLD learners in the actual education setting. This suggests that teachers may not be sure about their practical preparation or they may not have any preparation to deal with such setting. With this study we aimed to identify the potential factors that influence the ABpST regarding integrating SPMLD learners, and challenges faced. The specific research questions for this study were as follows: 1) What are the potential factors that influence ABpST towards EI? 2) What are ABpST regarding inclusion for SPMLD students? 3) What are the critical concerns and issues that need to be addressed for implementing inclusion?

Methodology
Developing Study Instruments
The Teachers' Attitudes towards Educational Inclusion Questioner (TAEIQ) was developed as the measurement instrument for this investigation. The TAEIQ is divided into three parts with 33 items in total. Part 1 of the study instrument contains 10 items generated from previous studies (Boyle, 2014; McHatton & McCray, 2007). Contextual factors such as personal and educational characteristics of teachers are stated in the literature review as being influential factors in shaping ABpST and implementation of EI practices (Loreman, Earle, Sharma & Forlin, 2007). Items in part 2 were generated from measures that were used previously in literature (Al Qaryouti & Al Shukaili, 2015; Antonak & Larrivee, 1995; Boyle, 2014; McHatton & McCray, 2007; Troxclair, 2013). These surveys have been characterised as useful and flexible instruments for ABpST regarding EI, special provision and support services to self-evaluate their educational practices as a whole (e.g., Loreman et al., 2007), rather than providing an evaluation of programmes offered to any specified student. Not all items for the revised instruments were relevant to the study context, therefore, the TAEIQ specifically drew on three areas: "variables related to students" (engagement and advantages and disadvantages), "variables related to preservice teachers" (competency, readiness, training, and planning), "variables related to the school environment" (resources, equipment and support). These categories were dependent on the multiple concepts combined. The 18 generated statements concentrated on identifying how pre-service teachers conceptualise the issues and processes that influence EI. Items in part 3 were developed from ideas emerging from previous research, consisting of six items that require written responses about issues that influence the implementation of EI. Only one line was included for written answers, which did not encourage detailed answers. All mentioned parts

above were incorporated into one survey questionnaire.

Face and content validity of TAEIQ were established upon review by four experts working in the field of special/inclusive education and educational research indicating that it was appropriate for this research purpose. This questionnaire was first written in Arabic and was then professionally translated into English with the help of three bilingual experts who reviewed both the Arabic and English versions. A pilot study was conducted with 40 university students who were similar to the participants in the actual research. Accordingly, three items were eliminated and/or modified in part 2 of the survey. Two items regarding some disability classifications were eliminated as some participants did not recognise these classifications and did not answer the questions. The other item was eliminated as all respondents presented the same answer on the same question. At this time, the factor analysis for the TAEIQ was analysed using principal components analysis. Items with negative-factor loadings below .25 were discarded. A three-factor solution identified six items for each sub-scale. The Cronbach's reliability coefficient was found to be .86 for the entire measurement. This indicates that this value is adequate and reliable for the purpose of the research.

Sampling and Tool Application Procedure
After having obtained official approval, the research tool was randomly distributed to 542 Jordanian pre-service teachers who were enrolled in five different departments in the Faculty of Educational Sciences (FoES) at the University of Jordan during the first semester of year 2018/19. Of the 542 distributed questionnaire, 476 were returned – a response rate of 87.8%. The data gathered were then analysed using the SPSS to answer the first and second question of this study. Meanwhile, qualitative data analysis was conducted to answer the third and final question, which was aimed at identifying the most important issues that pre-service teachers believed to be addressed in order to implement educational integration effectively and successfully. Of the 476 students who responded to the research tool, 45 (9.47%) students provided the most detailed written answer for qualitative analysis. Preservice teachers' written comments on the open-ended research questions in the study tool were coded. The codes were then categorised (or classified) under themes derived from the relevant literature and supporting theoretical and practical perspectives.

Before the dataset was used for further analysis, the gained dataset was screened. The Kolmogorov Smirnov (K-S) test was applied to confirm that the distribution of each dataset

corresponded to a normal distribution. The findings reveal that all the variables were distributed from 0.13 to 3.58 statistical K-S value and significant at $p > 0.00$. These findings demonstrate that all variables were normally distributed without any outliers, and it was sufficient for further analysis.

Results
Contextual Factors
The 476 participants in this study were from different backgrounds. Sixty-three (13.2%) were preservice teachers majoring in the field of special education while 86.7% were from other subjects; 298 (62.6%) were female and 178 (37.3%) were male teachers (see Table 1). When considering these findings, however, it is important to note that 62.6% of the respondents were female and 37.3% were male. Therefore, the sample was skewed in favour of the female students. However, the percentage of female (55–60%) and male (35–40%) students at faculties of education in Jordanian universities are fairly similar (Al-Zyoudi, 2006) to the sample in this research. Moreover, the breakdown of female (60–65%) and male (35–40%) pre-service teachers within the research authority gives a similar gender differentiation. This suggests that any gender balance in this investigation is to be expected in light of the national university education context.

The majority of respondents were fourth-year students (28.7%, $n = 137$), followed by first-year students (25%, $n = 119$), second-year students (23.5%, $n = 112$), and third-year students (22.8%, $n = 108$). Fifty-nine per cent of the students had varied experiences with disabled learners, while 40.3% had not had any exposure to students with learning disabilities (LD). Given the fact that university students have not graduated, the limited teaching and working experience indicated by the participants was not surprising. Only 109 (22.5%) of the total participants had obtained college courses in inclusion. Of this number, 59 (54.1%) were special education pre-service teachers and 48 (44.8%) were from other specialities. Besides that, only 122 (25.6%) participants had obtained college courses or training regarding teaching SPMLD students. Another 354 (74.3%) responded that they had not had such opportunities. Final-year respondents were reported as the highest number of respondents with 137 (28.7%) as compared to those in other years of study. Two hundred and eighty-nine (60.7%) of the participants had knowledge about EI and 187 (39.2%) indicated that they did not have knowledge about EI. Furthermore, 347 (72.6%) of the participants possessed knowledge about SPMLD students while only 129 (27.3%) did not have such knowledge. Only 23 (4.8%) participants indicated that they preferred to teach SPMLD students. The rest of the participants ($n = 453$ or 95.1%) indicated that they were more interested to teach other groups of students (i.e. those with moderate and mild disabilities – see Table 1).

Table 1 Means (*SD*s), and *t*-test results of the demographic variables

Variables	Categories	No./Ratio	*M/SD*	*t*	*p*
Gender	Females	298 (62.6%)	2.76 (1.812)	2.101	0.004
	Males	178 (37.3%)	2.55 (1.776)		
Specialisation	SE	63 (13.2%)	3.38 (2.745)	2.092	0.000
	Other	413 (86.7%)	2.81 (1.791)		
Experience	Yes	284 (59.6%)	3.80 (2.736)	2.320	0.023
	No	192 (40.3%)	3.03 (0.791)		
Studying a module or unit on EI	Yes	109 (22.5%)	2.93 (1.371)	7.739	0.000
	No	367 (77.1%)	2.10 (2.004)		
Teaching courses related to SPMLD learners	Yes	122 (25.6%)	2.87 (1.283)	5.003	0.048
	No	354 (74.3%)	2.19 (1.745)		

Note. SE = Special education.

To evaluate the predictor factors that may be related to the ABpST for implementing inclusion, the *t*-test and ANOVA were conducted. The *t*-test procedure yielded that male ($M = 2.55$, $SD = 1.776$) and female ($M = 2.76$, $SD = 1.812$) students had significantly different results on all the dimensions of performance, $t = 2.101$, ($p = 0.004$), as shown in Table 1. The total mean score for both female and male groups was negative rather than positive attitudes, while the female respondents had more positive attitudes than their male counterparts. Findings from the *t*-test also reveal that the participants who specialised in special education ($M = 3.38$, $SD = 2.745$) had more positive attitudes

than the participants from other participating categories ($M = 2.81$, $SD = 1.791$). The *t*-test also showed a significant difference in participants' attitudes towards EI, $t = 2.092$ ($p = 0.000$). Another significant difference was found between experience categories in favour of the teachers who had relevant experience or exposure to disabled students; the means were $M = 3.80$ ($SD = 2.736$), $t = 2.320$ ($p = 0.023$). More specifically, participants who have had working experience exhibited more favourable beliefs towards EI than their counterparts ($M = 3.03$, $SD = 0.791$) with no such experience. The findings also show that respondents were significantly different regarding

studying a course or unit on inclusion, as a function of $t = 7.739 = 0.014^*$, $p = 0.000$ (see Table 1 for further details).

The ANOVA procedures of the TAEIQ mean scores revealed that there were significant group differences among the four year levels of ABpST, $F = 1.927$ ($p = 0.000$), as illustrated in Table 2. The Scheffe's test was used to analyse the data in order to ascertain the differences. Its results were found to be statistically significant in the attitude diminution of fourth-year participants as compared to students in the other academic years. The ANOVA and Scheffe analyses of the individual scale items showed that the differences were traceable to items (6, 8 & 9) of the scale. These three items were specific to the desired benefits of SPMLD learners within the EI settings. This suggests that pre-service teachers' courses (or training) have a positive impact in stimulating positive changes in ABpST regarding integration. In contrast, a non-significant difference was found between previous knowledge on the concept and practices of inclusion and ABpST, as function $F = 11.877$ ($p = 0.181$). Similarly, no significant difference was revealed between "Knowing related SPMLD learners" and ABpST, as $F = 6.024$ ($p = 0.035$). More specifically, participants who have had previous knowledge on inclusion or SPMLD students exhibited more favourable attitudes than participants with no knowledge. These findings are detailed in Table 2.

Table 2 Means, ANOVA results based on the educational characteristic groups

Variables	Categories	No./Ratio	*M/SD*	*F*	*p*
Year of study	First	119 (25.0%)	3.13 (1.578)	1.927	0.000
	Second	112 (23.5%)	3.02 (1.821)		
	Third	108 (22.6%)	3.24 (1.637)		
	Fourth	137 (28.7%)	3.75 (0.930)		
Knowing related EI	Yes	289 (60.7%)	3.11 (1.002)	11.877	0.181
	No	35 (7.3%)	2.81 (0.981)		
	Not sure	152 (31.9%)	2.98 (1.200)		
Knowing related SPMLD learners	Yes	347 (72.6%)	3.62 (1.339)	6.024	0.035
	No	28 (5.8%)	2.92 (1.981)		
	Not sure	101 (21.2%)	2.88 (0.822)		
Favourite group	Mild disabilities	391 (82.1%)	2.88 (2.981)	3.745	0.132
	Moderate disabilities	62 (13.01%)	2.78 (1.250)		
	SPMLD	23 (4.8%)	3.01 (1.671)		

Preservice Teachers' Attitudes

From Table 3 it is clear that the mean score for the 476 participating pre-service teachers ranged between 4.01 ($SD = 1.04$) (i.e. highest mean score) and 1.62 ($SD = 1.29$) (i.e. lowest mean score), with a mean score of 3.08. The total distribution of mean scores across the participants tended to group towards the moderate scores of the survey (i.e., more moderate than positive attitudes). Specifically, attitudes related to items 1, 6, 15, 16, 17 and 18 ($M = 2.94$ ($SD = 1.63$), $M = 3.08$ ($SD = 1.26$), $M = 2.17$ ($SD = 1.10$), $M = 3.25$ ($SD = 1.53$), $M = 3.10$ ($SD = 1.50$), $M = 3.04$ ($SD = 1.19$), respectively) recorded a moderate level across the survey items. Most of these items dealt with learning resource and support variables except for item 6 $M = 3.08$ ($SD = 1.26$), which addressed the social skills aspect for SPMLD. This suggests that in many cases, participants did not view much evidence supporting or promoting opportunities of EI practices for SPMLD learners. Pre-service teachers' responses to the open-ended questions of the survey appeared to confirm this situation. In particular, the mean score analysis for university students revealed that they held positive and/or somewhat positive attitudes/beliefs towards the teachers' support of EI practices, their readiness to embrace the SPMLD learners (items 5 & 7), and the benefits of inclusion of SPMLD learners (items 8, 9 & 14) (as illustrated in Table 2). In contrast, they expressed more negative attitudes/beliefs regarding their competences to work in EI setting (items 3 & 10), and they had fewer positive attitudes regarding the negative effects on other learners, and the learning environment (item 13 & 18). Overall, the mean score of all scale diminutions portrayed a combined point of view $M = 2.82$ ($SD = 3.84$), which is less welcome or favourable to the EI approach of students with complex learning needs and additional support in the regular classroom, despite the fact that the participants indicated the benefits and advantages of inclusive teaching approaches for the SPMLD learners. However, the 0.95% confidence interval around the mean score was 2.84 to 2.88.

Table 3 Mean (*SD*s) scores of the attitudes of participants for summated TAEIQ

Item	*M*	*SD*	DTC	*p*-value
Variables related to pre-service teachers	2.36	1.77	.079	.130
Variables related to SPMLD learners	3.41	4.10	.094	.009
Variables related to the school environment	2.81	5.52	.085	.023
Total test	2.86	3.84	.086	.061

Note. DTC = Dimension-Total Correlation.

To identify the predictor factors that influence ABpST regarding adapted education practices, the Pearson's correlation coefficients and multiple linear regression procedures were conducted. The results of Pearson correlation revealed that factors such as year of study ($R = .178$; $p < .01$), experience ($R = .235$; $p < .01$), studying a module or unit on EI ($R = .209$; $p < .01$), and teaching courses related to SPMLD learners ($R = .146$; $p < .01$) were revealed to correlate positively with the ABpST for implementing EI. The findings of multiple regressions showed that year of university study ($\beta = .176$; $t = 3.549$; $p = 0.000$), teaching and working experience ($\beta = .310$; $t = 7.021$; $p = .002$), and teaching courses related to SPMLD learners ($\beta = .211$; $t = 5.008$; $p = .006*$) remained as the three predictor factors of ABpST regarding inclusion. The 19% of the variance in ABpST was explained by the independent variables, $F(2, 690) = 4.388$, $p < .01$; $R^2 = .095$.

Issues Faced
In the open-ended research questions in the survey, students were requested to identify the most important issues that needed to be addressed in implementing the EI approach effectively and successfully. In order to analyse, present and explain the results, the initial responses were coded and then condensed into four main themes. The first most commonly determined theme was teaching competencies and skills with regard to adapted education, especially general pre-service teachers. Involved in this theme were the ABpST towards their own ability, competency and skills regarding EI, their practical knowledge and experience about inclusion and SPMLD students, their adequacy to adapt curriculum and instruction to the EI process. Participants identified issues related to competency, skills, and experiences as mostly influencing their willingness to teach within the EI, and the crucial effect upon the application and implementation of such practices.

The second identified theme was support for the concept and practice of educational inclusion. Respondents who did not agree on that concept and practice, raised the issue. Responses in this theme centred around the challenges associated with teaching and working with SPMLD students, the potential negative impact on the academic achievement level of other students, and the psychological and emotional harm of SPMLD students from the inclusion process. These results give a possible explanation for quantitative survey findings which showed that the majority of preservice teachers were not fully supportive of that idea. This suggests that several participants have not taken any specialist courses on inclusion and how to work with such students.

Half or more of the participants regarded the third theme as an influential issue. Pre-service training was not the only issue raised by the participants in this theme. They were also concerned about the type or severity of students' disabilities within the EI setting, their willingness to accommodate only specific students with mild disability categories in their classes, and the difficulty in meeting inclusive curriculum demands and assessment practices for diversity needs. They indicated the feelings that disabled learners were special cases and they did not know how to work with them and teach them with other students in the inclusion. These beliefs are probably the result of the way that participants regarded SPMLD learners' needs. Participants might believe that these learners' needs would be too difficult to address in the EI setting, as it differed from the situation in special schools.

The last issue that the participants mentioned was the shortage of resources and support. Furthermore, the pre-service teachers were given a choice whether to apply the EI process or not. Most participants recognised that schools lacked appropriate resources to accommodate SPMLD students in inclusive classrooms. They indicated that schools had limited support and budgets, had small school buildings lacking in infrastructure to support EI.

Discussion and Implications
For this study, the ABpST generally indicated neutral to positive towards EI on the majority of questionnaire items, but revealed some variation according to the study variables and diminutions. The findings of this study are consistent with the recent global trends regarding EI, which require a positive or acceptable level of teachers' attitudes for implementing EI and achieving its objectives (Al Qaryouti & Al Shukaili, 2015; Goddard & Evans, 2018). According to Al Qaryouti and Al Shukaili (2015), the ABpST towards inclusion always begins with a limited level of acceptance and support, which then tends to develop into greater acceptance after the actual implementation process. This explains the ABpST with regard to the first research question, as during the study, EI and legislation in this regard were relatively new to

Jordan. In addition, there was lack of general awareness and practical knowledge about SPMLD learners in terms of the nature of their disability and educational rights. Some participating pre-service teachers also gave the impression that they did not care about the disabled students.

From the responses to the open-ended questions it was also clear that awareness and the educational environment were regarded as obstacles for implementing EI. Attitudes according to the factors related to the school environment in this study confirm such findings, with moderate means recorded for most items. Based on the participants' responses, it was clear that acceptance of SPMLD students in adapted teaching settings or not, was often associated with teachers' awareness, readiness and preparations as well as the availability of resources and support needed (Al-Zyoud, 2011; Al-Zyoudi, 2006). The actualisation of the EI approach, however, would face further delay if the educators did not support the idea.

The personal and educational characteristics of participating pre-service teachers were collected as extraneous factors that may impact their attitudes for implementing the adapted education approach. The findings from this study support the results from previous studies that suggest that ABpST and their personal characteristics, as well as contextual factors such as previous educational background and experiences can directly affect and facilitate relevant decisions to implement the EI process (see e.g., Sukumaran, Loveridge & Green, 2015). Sukumaran et al. (2015) also indicate that the personal and educational characteristics can lead to a decrease of or support for the directions and power of the development process. The key findings of our research are that the manner in which pre-service teachers recognise EI, and their awareness, understanding and knowledge of the subjects and related issues have generally influenced their engagement and support for the EI process. Female respondents, in particular, were found to have favourable attitudes compared to the male respondents. This was confirmed by the results of other studies (e.g., Yaraya et al., 2018). However, other researchers (Al-Zyoudi, 2006; Sharma, Shaukat & Furlonger, 2015) have shown the opposite finding and argued that results according to gender have remained inconsistent in pointing out such effect.

Across most survey items, participants who specialised in special education were found to have more positive attitudes than their counterparts from other disciplines, suggesting positive change brought about by the field courses and training (Yaraya et al., 2018). The insight acquired from our investigation is that the participants who specialised in special education benefited from theoretical and practical courses related to SPMLD learners and inclusion. This confirms, however,

that university curriculum and plans of special and general education in Jordan are more divergent than coordinated. The existence of these differences and the impact of the specialisation variable on the students' opinions may underline the need for universities to play an effective role in modifying their curricula and programmes at undergraduate and postgraduate level, so that their programmes contain some courses on disability and inclusion, in order to increase the awareness and knowledge of graduates of other university disciplines in this field, and improve their inclusive attitudes.

The study found that final-year participants' attitudes were more positive compared to first-year participants, suggesting that some positive change may be due to the fact that students in their final year have often completed courses and gained practical knowledge in this regard. Their positive attitudes could also be as a result of their direct contact with school students through various types of pre-service training programmes or practicums that were conducted at institutions, schools and taught by teachers with various experiences. This explains that the information, experiences and stimuli experienced by students during the final stage of the university study influenced their inclusive attitudes for accommodating SPMLD learners. This result was enhanced by another recent study conducted by Al Qaryouti and Al Shukaili (2015). Loreman et al. (2007) indicate that pre-service teacher training is the best method to cultivate positive teaching attitudes for implementing EI.

It has been argued that an inclusive and special needs education course, as well as experience with disabled children cannot be assumed directly to predict inclusive attitudes (Goddard & Evans, 2018). In our study, however, relevant courses and experience were found to be predictors of more positive attitudes for implementing EI, which is confirmed in studies by Fayez et al. (2011) and Sharma et al. (2015). The importance of contextual variables such as training and experience on teachers' attitudes, as captured in this research, presents clear evidence to show that in Jordan the targets of inclusion that originated from the Western countries, may not necessarily match national expectations (Al-Zyoudi, 2006). This mismatch could largely contribute to a major delay in policy implementation and sustainability of EI in Jordan.

The findings from the regression analysis point out that knowledge and courses were adequate to derive some positive changes in perspectives concerning EI, but its predicting power is perceived somewhat less than that of teaching and working experience. This suggests that participating pre-service teachers' practical courses and filed experiences equally impact their

beliefs regarding teaching SPMLD learners. This may be due to direct contact with disabled people, which in turn reflects on the growth of positive experience and self-confidence (Geldenhuys & Wevers, 2013). The change was significant for experienced pre-service teachers' attitudes towards SPMLD learners and their programmes according to teacher-related factors. The participants who did not have enough knowledge and experience in this study, however, voiced less favourable or negative attitudes for implementing adapted education for those learners. This also suggests that increased working and teaching experiences with disabled students could foster greater openness to inclusion. The findings, however, add evidence to support the prominence of such factors in influencing the ABpST for implementing EI.

The open-ended question findings also raised other concerns and issues (above-mentioned), that influence on implementation of EI. This might explain the result of earlier studies (see e.g., Geldenhuys & Wevers, 2013; Goddard & Evans, 2018; Kiswarday & Štemberger, 2016) on the inclusion challenges in the present study context. Hence, it is possible to understand the participants' prior perspectives of inclusive teaching, as it requires special preparation and field experiences for EI, which may have been unavailable to the participating university students in our investigation. Besides that, available training courses and plans might have the expected positive effects. So, it is crucial to determine the kind of inclusive preparation programmes that would create positive outputs in embracing EI. Thus, despite having signed the Salamanca convention in 1994, Jordan is yet to fully implement inclusive education in public schools.

Conclusion

The essence of our investigation was to explore ABpST for implementing inclusion and to determine which factors influence the success of this process and its challenges in Jordan. The ABpST towards inclusion were moderate to positive and the majority of selected factors brought up in the literature were found to influence EI practices. In particular, practical courses and field experiences were found to be the most deciding factors in determining the success or failure of inclusive practices. The other most important factor had to be pre-service teachers' awareness, understanding and knowledge about adapted education practices. The results of this study has provided a perspective to clarify the relatively of pre-service teachers' negative attitudes regarding inclusion as reported in the literature. The importance of considering the design and the actualisation of inclusive education in university programmes for future teachers has been highlighted.

Authors' Contributions
Hamz Alshoura and Aznan Che Ahmad wrote the manuscript and provided data for Tables 1, 2 and 3, and they conducted all statistical analyses. Both authors reviewed the final manuscript.

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