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Perceptions of Professionals Working with Students with Disabilities towards the Use of E-Portfolios: Opportunities and Challenges

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Abstract

To keep pace with the requirements of this technological era, this study aims to propose the idea of using e-portfolios to save and present information about students with disabilities in Jordanian special education institutions.

The sample consisted of 102 professionals (90 females and 12males) working with these students at six of these institutions to identify applicability and challenges associated with the creation of e-portfolios from their point of view. An example e-portfolio and a questionnaire were developed for the study. The Statistical Package for the Social Sciences (SPSS-16.0) was used to provide basic descriptive statistics for the data. In addition, an independent samples t-test was run to indicate any statistically significant differences between the means of current job variable levels.

Results reflected positive perspectives toward e-portfolios. Overall feedback from the participants of the study reflected positive perspectives towards e-portfolios in the dimensions related to their effectiveness to provide quality information to serve different objectives, their uses and advantages, technical and organizational matters associated with presenting the content, and benefits that the child gains when participating in the preparation process of them. However, concerns and challenges about specific issues related development process of e-portfolios were reported.

In order to take advantages of available technology, this study presents the idea of creating e-portfolios for students with disabilities at Jordanian special education institutions. The overall feedback reflects positive perspectives towards e-portfolios, the participants concern about specific issues that may arise when developing them.

Keywords: Special education, e-portfolios, students with disabilities, perceptions.

تصورات الاختصاصيين الذين يعملون مع الطلبة ذوي الإعاقة تجاه استخدام الملفات الإلكترونية: الفرص والتحديات

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ملخّص

في محاولة لمواكبة متطلبات هذا العصر التكنولوجي، هدفت هذه الدراسة إلى تعرُّف اقتراح فكرة استخدام الملفات الإلكترونية لحفظ وتقديم المعلومات حول الطلبة ذوي الإعاقة في مؤسسات التربية الخاصة الأردنية. وتكونت العينة من 102 من المهنيين الذين يعملون مع هؤلاء الطلبة في ست من هذه المؤسسات لتحديد قابلية التطبيق والتحديات المرتبطة بإنشاء ملفات إلكترونية من وجهة نظرهم. جرى تطوير مثال لملف إلكتروني واستبيان لأغراض الدراسة. عكست النتائج وجهات نظر إيجابية تجاه الملفات الإلكترونية. ومع ذلك، تم الإبلاغ عن مخاوف وتحديات حول قضايا محددة تتعلق بعملية تطويرها. جرى تضمين الآثار والتوصيات ذات الصلة.

الكلمات الدالة : التعليم الخاص، الملفات الاكترونية، الطلبة ذوي الاحتياجات الخاصة، التصورات

Introduction

Requirements of Jordanian law on the Rights of Persons with Disabilities (2017) states that a disability cannot be a reason to exclude a person from any educational institution (article 17.a); and that reasonable accommodations arrangements should be made by the Ministry of Education (MOE) to insure their enrollment to educational institutions (article 17.b). Accordingly, MOE has established more than 1000 resource rooms in public schools across the country, Jordan, for those students to be educated alongside their peers without disabilities. However, making decisions regarding educational placement for students with disabilities in inclusive settings; such as resource rooms and self-contained classrooms, is one of the most challenging issues facing those students in this country. This applies to most Arab and developing countries, too (Alkhateeb, Hadidi, & Alkhateeb, 2016). Several factors have been cited in research conducted in Arab countries that may affect this issue. One of these factors is related to teachers' and/or administrators' negative attitudes and/or perceptions toward inclusion and/or students with disabilities. (Alghzo, 2002; Alghzo, Dodeen, & Alqaryoouti, 2003; Almotairi, 2013; Amr, Al-Natour, Al-Abdallat, & Alkhamra, 2016; Anati, 2012; Gaad & Khan, 2007). Meanwhile, Amr and her colleagues tried to classify reasons involved with these negative attitudes in literature where they identified two main domains; and one of them is "related to teachers' knowledge and preparation in the area of inclusion" (p. 68) where most Arab countries have a serious lack of it (Alkhateeb et al.).

Considering the above obstacles and challenges hinder inclusive education practices, Sanbonmatsu and Fazio (1990) illustrated "the functional role attitudes play in guiding decisions and behavior" (p. 614). As well, Sanbonmatsu, Prince, Vanous&Posavac (2014) presented a discussion on how attitudes do guide decisions through several processes. These provoked one author's memory to think of a presentation that was held at the Fourth Annual Summer Inclusion Institute at Phoenix, Arizona about utilizing print and digital media to facilitate transitions for students with disabilities (MacFarland & Brodsky, 2008). It would be a practical way to overcome challenges associated to teachers' attitudes, relevant current practices, and limited teacher preparation programs in inclusive education in Jordan that affect decision making regarding inclusion of these students. This is it; developing electronic portfolios (e-portfolios) for students with disabilities, not only for decision making to be more authentic and reasonable, but also to keep up with the requirements of this technological era.

It is not a pioneer idea to use e-portfolios; but in special education field, it might be a good idea to draw attention to take it into consideration while making educational inclusion decisions; especially with the lack of decision makers' information in this area that may affect their attitudes and thus their decisions. Noticeably in Jordan, relying on paper-based documents is the traditional and common practice when it is time to make educational placement decisions regarding students with disabilities. As Kimeldorf (1997) claimed, paper-based documents do not include variety of data sources compared to digital portfolios that provides the audience with greater insight regarding their owners' achievements. Data sources, or "*multimedia materials*" as referred by Abrami and Barrett (2005), can be visual and auditory including text, images, videos and sound that allow users, including those at-risk, to easily demonstrate their competencies through authentic content (Abrami& Barrett). It was mentioned by Clancy & Gardner (2017) that from the challenges concerning paper portfolios those related to neither providing "effective evidence of student progress due to the multisensory nature of the curriculum" nor accurately capturing "student progress made in the community and other non-traditional classroom settings" (p. 96). Other relevant research studies in literature related to challenges connected to paper-based portfolios indicated their disadvantages in terms of cost (Ibrahim, Alzahrani, & Aljuaid, 2010), storage (Clancy & Gardner; Ibrahim et al.), convenience, flexibility and/or user-friendliness (Clancy & Gardner; Driessen, Muijtjens, Tartwijk, & Van Der Vleuten, 2007; Ibrahim et al.). According to Haynes (2017) and Montes (2013), paper portfolios are already used in Special Education field for several purposes; such as for progress monitoring (Stockall, Dennis, & Rueter, 2014), for assessment (Boerum, 2000; Carothers & Taylor, 2003; Smith, Brewer, & Heffner, 2003; Stockall & Smith, 2013) and for transition (Lock & Layton, 2007); however, "the students have no buy-in and want nothing to do with the portfolios" (Haynes, para.1).

The purpose of this paper is to propose an idea in special educational institutions on how to integrate technology to save and present students' information in a way that may facilitate and improve decision making regarding educational

placement for students with disabilities. Moreover, to get feedback from professionals working with those students in these institutions as they are the most responsible people to collect regarding data that can be included in the e-portfolios. So, it is important to get their feedback on e-portfolios' applicability, effectiveness, uses, advantages; including related technical matters, possibilities to get students with disabilities themselves and their parents involved in development process for e-portfolios, as well as, expected challenges or concerns when developing or using them from their point of view.

E-portfolios have been targeted in many research studies. Topics that were discussed or investigated in relevant research studies include: definitions and types or classifications of e-portfolios (Greenberg, 2004; Lorenzo & Ittelson, 2005; Montes, 2013), their advantages and uses in different domains (Black, 2010; Bleasel, Burgess, Weeks, & Haq, 2016; Bokser, Brown, Chaden, Moore, Cleary, Reed,... & Wozniak, 2016; Cappuccio, Compagno, & Pedone, 2016; Chye, Zhou, Chia, Koh, & Chew, 2012; Clancy & Gardner, 2017; De Arment, Wetzel, & Reed, 2013; Ibrahim et al., 2010; Driessen et al., 2007; Heath, 2005; Montes, 2013; Trexler, 2015), challenges or factors affect using them (Montes; Heath; Lorenzo & Ittelson; Luera, Brunvand, & Marra, 2016; Thibodeaux, Cummings, & Harapnuik, 2017), as well as, analytical review or future visions or suggestions (Abrami & Barrett, 2005; Barrett, 2005; Haynes, 2017; Hicks, Russo, Autrey, Gardner, Kabodian, & Edington, 2007; Rhodes, 2018; Wilson, Slade, Kirby, Downer, Fisher, & Nuessler, 2018; Woodward & Nanlohy, 2004; Yancey, 2009). Worth to mention that "*digital portfolios"* and "*web-based portfolios (webfolios)"* are other terms used in literature, sometimes interchangeably with e-portfolios.

Given the above, Haynes (2017) concluded from his review of literature that e-portfolios are still rarely utilized with students in Special Education although it has shown to be beneficial for them. For example, Black (2010) suggested the potential role that digital transition portfolios provided for high school students to advocate for themselves, be more accountable academically and more independent when they have the opportunity to participate in developing, maintaining and sharing them. As well, Glor-Scheib, & Telthorster (2006) revealed the importance of students with disabilities' participation in their IEPs and transition meetings. They proposed that this could be activated through student' engagement in the processes of planning, preparing, and presenting of their own e-portfolios. Such involvement helps them to develop essential skills to succeed in adult life, such as, self-determination and self-advocacy, as well as, to get their voices be heard.

Related studies to possibility of using of e-portfolios in Special Education include Montes' study (2013) where she investigated the role e-portfolios play as a tool for assessing secondary students with and without disabilities from a teacher's perspective of a geometry class. Results showed good final products for both students as e-portfolio assessment allowed the flexibility to finish or edit their work according to their individual pace level of grasping related concepts. However, additional support and guidance were provided to students with IEPs to help them in editing process to adequately incorporate vocabulary words related to content.

Similarly, another study was conducted by Trexler (2015) to examine a teacher's use of a digital transition portfolio as a tool to measure progress on secondary transition goals for students with mild to moderate disabilities in an inclusive urban high school career research and development class. Results indicated that digital portfolio development can facilitate the transition experience for young adults with disabilities and improve their skills.

As for Clancy & Gardner (2017), after piloting the use of digital portfolios in a school for students with moderate to severe of different categories of disabilities, aged 14 to 21, they inferred that "e-portfolios remain on the forefront of tools poised to support"(p. 99) both quality of learning and assessment for students.

Significance of the study

Given that only e-portfolios research in the field of special education at the secondary school levels was found, this study enriches the research in using e-portfolios at the elementary school levels for students with disabilities. It attempts to introduce a non-traditional way to save and present students' information using e-portfolios. This could be a practical solution to an actual problem related to limited teachers' knowledge and preparation about inclusion in Arabic countries. It draws attention to the potential use of e-portfolios to facilitate decision-making regarding the inclusion of students with disabilities. This study explores the opinions of teachers and professionals working with these students about applicability

and challenges related to the use of e-portfolios. The results of the study may change policies and improve practices regarding inclusion of these students in schools, communities, and work. The results may also have implications for teachers' development and other parties involved in those students' education. It might be a way to change our thinking to improve our educational system.

Accordingly, the following research questions were posed:

Q1: What are general perceptions of professionals working with students with disabilities related to e-portfolios?

Q2: Are there significant differences between special education teachers and other professionals related to their general perceptions about e-portfolios?

Q3: What are the expected challenges to develop or use e-portfolios from professionals' perceptions?

Methods

Participants and Settings

This study took place at six special educational institutions in Jordan. These institutions were randomly selected to cover northern, eastern, western, southern and middle areas of Amman, the capital of Jordan.

A total of 102 professionals participated in the study from these institutions. The sample consisted of several independent variables included gender, age, qualifications and others. According to gender, females were 90 out of 102, while males were 12. According to age, three groups of age were suggested: 25 years old and below, 26-30 years old and 31 years old and above. According to qualifications, the following levels were suggested: community college diploma and below and bachelor's degree or higher. According to specialization, three fields were presented: Special education, humanities disciplines and scientific disciplines. Years of experience were divided into three groups: Less than one year, 1-5 years and 6 years and above. Finally, according to participants' current job, there were two groups: special education teachers and other professionals including physical therapists, occupational therapists, speech-language therapists, directors.

Table 1. Distribution of the survey sample according to the demographic variables

Variable and its levels		Total	Percentage (%)
Gender	Male	12	11.8
	Female	90	88.2
Age	25years old and below	43	42.2
	26 - 30years old	25	24.5
	31years and over	34	33.3
Qualification	Community College Diploma and below	29	28.4
	Bachelor's degree or higher	73	71.6
Specialization	Special Education	54	52.9
	Humanities Disciplines	26	25.5
	Scientific Disciplines	22	21.6
Current job	Special Education Teacher	55	53.9
	Other (Physical Therapist, Occupational Therapist, Speech-Language Therapist, Director)	47	46.1
Years of Experience	Less than one year	20	19.6
	1-5years	50	49.0
	6years and over	32	31.4
Target groups of disability in workplace	Intellectual Disability	51	50.0
	Autism Spectrum Disorder	14	13.7
	Multiple Disabilities	37	36.3
Total		102	

Instrumentation, Implementation and Data Analysis

An example e-portfolio and a questionnaire were developed for the purposes of the study. For the e-portfolio, process of its development followed the steps cited in both Montes (2013) and Black (2010) as applicable. The researchers of the study agreed to create an e-portfolio with multiple types and mixed content as its purpose was to present and show the idea and different purposes of e-portfolios for the participants of the study. PowerPoint program was decided to be used for displaying the content as it is easy, and friendly used (Glor-Scheib & Telthorster, 2006), and when having poor internet access at schools; it becomes one of the best programs recommended to be used for the creation of e-portfolios as cited in Montes.

In order for providing the content of the PowerPoint, a consent of parents of 10 years old child with Down syndrome was taken to accept participation; including sharing information about the child with the participants for the purposes of the study. A collaborative efforts were established among the researchers, parents, teachers and the child himself to collect the content of the PowerPoint through interviews, observations in different settings (e.g., at school, mall, home) and searching available recent photos and other artifacts belongs to the child, as well as, to document it in electronic format (e. g., digital video snaps, digital photos, voice recording clips, scanned writing/ homework samples, scanned medical or educational evaluation reports) and to select whatever appropriate for the goals determined previously to be included in the presentation.

For organizational issues related to content of the PowerPoint, it was categorized to reflect capabilities of the child in specific areas (Carothers & Taylor, 2003). Referring to Intellectual Disability definition(Schalock, Borthwick-Duffy, Bradley, Buntinx, Coulter, Craig, Shogren …, & Yeager, 2010) where Down syndrome is of its main categories, the areas that were covered in the PowerPoint included both intellectual functioning (e. g., learning) and adaptive behavior as expressed in conceptual (e. g., language, reading, writing, money, time, and number concepts), social skills (e. g., interpersonal skills, social responsibility, following rules/ obeying laws) and practical adaptive skills (e. g., activities of daily living or personal care, schedules/routines, use of money, and use of the telephone).This content was organized on USB drive for publication matters.

The final content of the PowerPoint provided information about the child's learning story: background information about him, his current level of performance and his progress and abilities in different skills, his ways of learning, his hobbies and interests, his preferences and worries, as well as, his feelings and needs. Table 2 shows outlines of electronic content included in the PowerPoint. All written annotations in the PowerPoint about the content were in the child's own voice (e.g., I like..., I can..., Guess! what am I doing?). There was an active role of the child in the development process of the e-portfolio through participating in selecting the content and having reflection on, as well as, recording voice and video clips.

Table 2. Outline of electronic content included in the PowerPoint

- A video clip to the child introducing himself using his own words.
- A video snap for the child reading a paragraph from his curricular book in the class.
- A video snap for the child doing math assignment.
- A video clip demonstrating the child's computer skills to communicate with his brother outside the country through using Skype application.
- A scanned educational evaluation record for the child at the end of school year.
- A voice recorded for the child's comments on specific photos.
- A scanned photo taken for a written note that says "Nobody put the charger" signed with the child's name. The child wrote the note and fixed it at the wall besides the TV at home where he expressed his bother when he wanted to turn on the TV and found that one of his family members removed the TV wire and replaced it with the mobile phone charger.
- A photo demonstrating differences of the child's handwriting before and after the last school semester.
- Photos demonstrating the child's involvement in social events and doing social skills, self-care skills, hobbies and interests in different settings.

For the questionnaire, it was developed to collect participants' responses and it composed of three parts. The first part was to collect demographic information. The second part was to explore participants' opinions related to four dimensions through responding to a five level Likert scale (ranged from "strongly disagree" to "strongly agree"). The first dimension is about objectives that might be achieved through information included in e-portfolios including 9 items (see Table 3). The second dimension is about possible uses and advantages of e-portfolios including 11 items (see Table 4). The third dimension is about technical and procedural/ organizational issues to present information including 7 items (see Table 5). The fourth dimension is about advantages a child obtains when participating in preparation process of e-portfolios including 9 items (see Table 6). Items of this part were developed in light of the previous relevant literature (Black, 2010; Bleasel, Burgess, Weeks, &Haq, 2016; Bokser, Brown, Chaden, Moore, Cleary, Reed,... & Wozniak, 2016;Cappuccio, Compagno, &Pedone, 2016; Chye, Zhou, Chia, Koh, & Chew, 2012; Clancy & Gardner, 2017; De Arment, Wetzel, & Reed, 2013; Ibrahim et al., 2010; Driessen et al., 2007; Montes, 2013; Smith, Brewer, & Heffner, 2003; Trexler, 2015). The third part included information about participants' previous knowledge of e-portfolios, their general estimation of the use or develops them, as well as, an open-ended question to address expected challenges and related hindrances to develop or use e-portfolios from their point of view. This might provide a comprehensive insight for issues related to teacher development, as well as practical solutions to ease inclusion.

In order to establish the face validity of the questionnaire, an initial version was given to 10 special education and educational technology professors to comment on items' degree of representative of the area to be measured, their linguistic integrity and clarity. All the comments and suggestions were taken into consideration and were incorporated in the final version of the questionnaire. There was unanimous agreement on the suitability of the questionnaire to the research purposes. For reliability indicators, the value of Cronbach Alpha for the second part of the questionnaire was 0.96. It was extracted by piloting the questionnaire on 30 professionals (15 special education teachers and other 15 who are working with students with disabilities). This pilot sample was not included in the study sample.

For the implementation process, a visit was scheduled for each special educational institution which was selected for the purposes of the study. Two of the researchers made arrangements in order to hold a mini workshop during these visits in the fall semester of the academic year of 2019/2020. Data show equipment was required to be available to present the content of e-portfolio during the workshop. Each workshop took one and a half hour to provide brief information about the idea of e-portfolios, types and uses, as well as, to display the content of the e-portfolio that was prepared for the purposes of the study (see the Appendix).After that, the questionnaires were handed to the participants who signed consent forms to collect their feedback.

Regarding data analysis, Statistical Package for the Social Sciences (SPSS-16.0) was used to provide basic descriptive statistics for the data. In addition, an independent samples t-test was run to indicate any statistically significant differences between the means of current job variable levels (special education teacher, other jobs) in accordance with their feedback related to the dimensions investigated.

Results

For responses at the second part of the questionnaire, mean scores of them were categorized as following: averages of 3.66 or more indicate high level of agreement; averages ranging from 2.34 to 3.66 indicate medium level of agreement; and averages of 2.34or less indicate low level of agreement; noting that the highest possible average value is 5 degrees and the lowest possible average value is 1 degree.

Referring to the first question of the study, responses were specified according to the second part of the questionnaire. For exploring participants' opinions related to effectiveness of e-portfolios to provide quality of information to serve different objectives, the mean scores and standard deviations (SDs) of participants' responses were calculated. As shown in Table 3, the mean scores of all items ranged between (4.70) and (4.40). As well, the total average was (4.5464). This indicates a high level of agreement that the information included in e-portfolios may have great impacts to achieve different objectives listed in table 3 in favor of the child.

Table 3. Average scores and SDs obtained on the quality of Information included in the e-portfolios to serve different objectives

Objectives that might be achieved through information included in e-portfolios	Mean	SD
Identifying the child's best performance in specific areas (e. g., academic skills, independent life skills, social skills, etc.)	4.70	.462
Recognizing the child's skills in real life situations (such as using computer in social communication skills, etc.)	4.53	.671
Obtaining information on the development and progress of the child's performance (such as language, writing, self-care, etc.)	4.65	.539
Identifying the child's learning patterns (audio, visual, sensory…)	4.57	.554
identifying some appropriate methods and means for the education of the child	4.51	.559
Identifying the circumstances under which is the best performance of a child (such as extra time for tasks, visual hints, etc.)	4.40	.682
Obtaining documented samples of child responses or performance in specific skills (e. g., academic skills, independent life skills, social skills, etc.)	4.60	.512
Identifying areas of performance that need to be trained or developed for a child	4.50	.577
Obtaining a thorough information about the child in various areas of development	4.46	.688
Total average	4.5464	.41918

Table 4 provides the mean scores and SDs of participants' opinions about uses and benefits of e-portfolios. It is noted that the mean scores ranged between (4.61) and (4.34) degrees. Also, the total average was (4.4924). Again, this reflects a high degree of agreement on the benefits and uses of the e-portfolios for the professionals working with the child and the parents as represented in the items included in table 4.

Table 4. Average scores and SDs Obtained on the e-portfolios' uses and advantages

Possible uses and advantages of e-portfolios	Mean	SD
Identifying current level of performance of the child for the preparation of the IEP	4.61	.548
Being able to assess, measure and monitor the development and progress of the child	4.60	.531
Being able to identify some goals in the child's plan	4.58	.496
Being able to prioritize working with the child	4.47	.576
Assisting in making the decision regarding inclusion of the child and to educating him in the LRE	4.34	.667
Assisting in planning and designing the teaching to suit the child's abilities and potential	4.42	.681
Being able to make educational decisions objectively and accurately	4.40	.752
Increasing opportunities for cooperation, information sharing and communication with other professionals working with the child	4.53	.558
Reducing the impact of preconceived expectations about the child when making various decisions	4.36	.610
Possibility to use it to guide families with disabilities in a useful and effective manner	4.56	.573
Possibility to activate the role of a child's parents by participating in information gathering, taking pictures, and monitoring the skills and behavior of the child inside the home	4.55	.623
Total average	4.4924	.43881

For participants' perceptions about technical and procedural/organizational issues related to presenting information through e-portfolios, the mean scores and SDs of their responses were calculated. As shown in Table 5, the mean scores of all items ranged between (4.73) and (4.54). As well, the total average was (4.6240). This indicates a high level of

agreement that information acquired through e-portfolios may be effective in terms of technical and procedural/ organizational matters listed in Table 5.

Table 5. Average scores and SDs obtained on the technical and procedural/ organizational issues related to presenting information through e-portfolios

Technical and procedural/organizational issues to present information	**Mean**	**SD**
Providing information about the child in an interesting and engaging way	4.73	.445
Viewing the information readily and easily	4.65	.500
Access information in an organized manner	4.61	.600
Providing clear information about the child	4.59	.569
Shortening the time needed to perusal the information	4.58	.667
It represents a good investment of the team time to meet, collaborate and communicate about the child's favor.	4.56	.573
Adjusts the information easily (e.g., adding photos or comments about the child's performance/ development or progress achieved/ acquired skills)	4.54	.605
Total average	4.6240	.41559

Table 6 provides the mean scores and SDs of participants' opinions about the benefits that the child gains himself when participating in the preparation process of e-portfolios (e.g., selecting the content, having reflection on, recording voice and video clips). It is noted that the mean scores ranged between (4.67) and (4.31) degrees. Also, the total average was (4.5082). Again, this reflects a high degree of agreement on the benefits of the e-portfolios for the child as represented in the items included in table 6.

Table 6. Average scores and SDs obtained on the benefits of the child's participation in the development of e-portfolios

Advantages a child obtains when participating in preparation process of e-portfolios	**Mean**	**SD**
Raising the child's enthusiasm, motivation, and liability	4.55	.639
Increasing the child's self-confidence	4.62	.614
Providing an opportunity for the child to demonstrate his or her abilities and potential	4.62	.581
Providing an opportunity for the child to exercise his/ her right to choose (e. g., selecting the file content)	4.48	.674
Providing an opportunity for the child to better know his/ her strengths, and needs	4.44	.698
Increasing opportunities for the child to participate in planning his/ her program objectives	4.31	.820
Increasing opportunities for the child to participate in prioritizing his/ her learning	4.31	.783
Providing positive reinforcement for the child	4.58	.535
Increasing opportunities of the child to interact with the family and the teacher	4.67	.474
Total average	4.5082	.51875

Referring to the second question of the study, to check differences between the means of current job variable levels (special education teacher, other jobs) according to the participants responses related to the four dimensions investigated in part two of the questionnaire, an independent samples t-test was run. Table 7 provides the obtained results.

Table 7. Participants' responses overall averages according to their current job and t-test results

Dimensions	Current job	Averages	T	p-value (sig.)
Objectives to be achieved through included information in e-portfolios	Special Education Teacher	4.5922	1.196	.234
	Other jobs	4.4928		
Benefits and uses of e-portfolios	Special Education Teacher	4.5716	2.000	.048
	Other jobs	4.3997		
Technical and procedural matters	Special Education Teacher	4.7186	2.571*	.012
	Other jobs	4.5109		
Benefits to the child himself	Special Education Teacher	4.5939	1.827	.071
	Other jobs	4.4078		

*Statistically significant ($p \leq \alpha$ 0.05)

As shown in Table 7, there were statistically significant differences between the averages of the two groups related to the benefits and uses of e-portfolios (t=2.000, p=0.048); where the averages showed that the agreement degree of special education teachers (4.5716) was higher than that for other professionals (4.3997). Similarly, there were statistically significant differences between the averages in technical and procedural issues associated with the use of e-portfolios (t=2.571, p= 0.012) in favor of special education teachers; where the averages of both groups were 4.7186 and 4.5109, respectively. However, there were no statistically significant differences between the averages of the two groups at α=0.05 on the objectives that may achieved through information in e-portfolios, as well as, on the benefits to the child himself when participating in the preparation of e-portfolio.

Results of the third part of the questionnaire included related general information. For example, 32 respondents (represents 31.4% of the sample) had previous knowledge about e-portfolios. Sources of their knowledge were diversified where 10.8% of them were self-educated, 8.8% of them had courses during academic study, 2.9% of them attended training programs and a similar percentage attended workshops. Also, 22 participants (represent 21.6% of the sample) stated that their institutions sometimes require them to retain an electronic copy of specific activities or skills of the students for documentation purposes. Moreover, both numbers and percentages of participants' degree of agreement to use e-portfolios instead of paper portfolios, as well as their desire degree to get or save information about all students through e-portfolios are presented in Table 8. And about participants' general estimations of the expected benefits from using or developing e-portfolios; the estimations were 06%, 08% and 100% for 17, 52 and 27 participants, respectively, whereas (6) participants did not insert their estimation.

Table 8. Numbers and percentages of participants' degree of agreement to use e-portfolios and degree of desire to get and save information Through-portfolios

Degree of agreement	Number	percentage%	Degree of desire	Number	percentage%
Very agree	40	39.2	Very agree	37	36.3
Agree	44	43.1	Agree	52	51
Neutral	9	8.8	Neutral	8	7.8
Not agree	0	0	Not agree	0	0
Not very agree	1	1	Not very agree	0	0
Undefined	8	7.8	Undefined	5	4.9
Total	102	100	**Total**	102	100

Referring to the third question of the study, responses to the open-ended question at the third part of the questionnaire were to address expected challenges/ concerns and related hindrances to develop or use e-portfolios from the participants'

point of view, issues emerged through their responses includes: privacy matters regarding sharing and disseminating the information through pictures and videos; time needed for preparation process; degree of collaboration from parents; technology matters in terms of both its availability and mastery; finally, degree of a student's interest and desire to be involved in the development process of his/ her own portfolio.

Discussion

E-portfolios have been applied in various domains as they have the potential to fulfill the requirements of this technological era. And in order for us to keep pace with this age and be part of it, we have to take advantage of what is available and exploit it for improving quality of educational opportunities of students with disabilities in our country, Jordan. As a first step toward achieving that, this study tried to introduce the idea of e-portfolios and get feedback from the professionals working with these students as it will be their responsibility to take a step forward and bring this idea to life.

Overall feedback from the participants of the study reflects positive perspectives towards e-portfolios in the dimensions related to their effectiveness to provide quality information to serve different objectives, their uses and advantages, technical and organizational matters associated with presenting the content, and benefits that the child gains himself when participating in the preparation process of them. This is consistent with what have been indicated in previous studies(Black, 2010; Bleasel, Burgess, Weeks, &Haq, 2016; Bokser, Brown, Chaden, Moore, Cleary, Reed,... & Wozniak, 2016;Cappuccio, Compagno, &Pedone, 2016; Chye, Zhou, Chia, Koh, & Chew, 2012; Clancy & Gardner, 2017; De Arment, Wetzel, & Reed, 2013; Ibrahim et al., 2010; Driessen et al., 2007; Montes, 2013; Smith, Brewer, & Heffner, 2003; Trexler, 2015).As well this beholds promising changes in educational system in our country.

For the significant differences found between the averages of the two groups of current job variable: special education teacher; and other jobs (e. g., physical therapist, occupational therapist, speech-language therapist, director)in favor of special education teachers, this might be explained in light of job duties expected from special education teacher in our institutions. Those include involvement in planning, teaching, making decisions for educational placement and inclusion, communicating with parents, contacting, and collaborating with other professional, and spending most of the time with the students. So, the items listed on benefits and uses of e-portfolios, referring to Table 4, may make more sense for special education teachers than for the other professionals, especially, that teamwork is not effectively applied in our institutions. Regarding the significant differences found between the two groups on the technical and procedural/ organizational issues related to presenting information through e-portfolios, again, this might be a reaction related to the nature of work and roles of special education teachers that require and imply using paper work and working with small groups of the students most of the time comparing to other professionals' duties that may incorporate various strategies and tools away from paper work with only one student per session. So, one may note that saving and presenting information through e-portfolios would be a non-traditional way that may make special education teacher be more optimistic, positive and interactive with issues such as attraction of the information, clarity, organization, time saving, ease to access to information and making needed adjustments. Worth to mention that one should be careful that overload or excessive information may be a challenge of technical or organizational issues (Lorenzo &Ittelson, 2005).

An important input in this study came from participants' responses on the open-ended question to address expected challenges/ concerns and related hindrances for developing or using e-portfolios. One of the main important concerns that emerged and needs to be highlighted relates to privacy matters regarding sharing and disseminating the information with any electronic format. In this regard, Black (2010) differentiated between digital portfolio content stored on CD, DVD, or USB flash-drive and web-based portfolio content created as a website in terms of security and confidentiality in favor of digital portfolio content. For Clancy & Gardner (2017), it was one of main criteria to be met, when choosing software and platform for developing e-portfolios, its capability to offer extensive privacy controls. In her turn, Barret (2007) indicated that using some internet applications, such as Google Docs, allows the user to control who can see the content and what content can be accessed of the e-portfolio. According to Hicks and his colleagues (2007), parents' permission should be obtained to display the information of students on the Internet. However, this is not a guarantee of confidentiality. Risks and realities associated

to digital information dissemination should be discussed by professionals with all parties involved; as well as, effective techniques have to be implemented to assure quality of content to be disseminated in terms of appropriateness, respect, and confidentiality; moreover, safeguards procedures should be clear, well informed and accessible to ensure parents and students' rights (Skouge, Kelly, Roberts, Leake, &Stodden, 2007). Briefly, it is adigital ethics issue (Wilson et. all, 2018).

Another important issue that participants pointed out is the challenge related to technology in terms of both its availability and mastery. This applies not only to professionals, but also to students. Montes (2013) indicated these challenges using "*access and responsibility*" terms. One may notice the relation between availability of technology and its accessibility; as availability itself is not enough. For example, availability of software and hardware for students with disabilities to develop their digital portfolios may not be enough without availability of needed assistive technology devices for accessibility purposes (Black, 2010). Also, the relation between responsibility and mastery of technology skills may be noticed for professionals as they should be responsible to keep updating their technological knowledge and skills through engaging in training whenever available, and for students as they should be engaged in their own learning; it is a responsibility of all to collaborate with each other to catch up with technology changes (Montes).

Factors found to affect availability and/ or accessibility of technology include its cost (Milman, 2010; Montes, 2013; Yancey, 2009); its ease to use (Clancy & Gardner; 2017; Yancey); and technical skills one owns for using available programs (Milman).For factors cited in related literature that affect mastery of technology, they include technical support provided for users by their institutions (Clancy & Gardner; Milman); training and professional development (Clancy & Gardner; Lorenzo &Ittelson, 2005); and provision of various resources by the institutions to teach users required technological skills (Luera et al., 2016; Montes).

From a different perspective, Hicks and his colleagues (2007) viewed e-portfolios "to be generative, reflective, and indicative of one's technological competencies" (p. 457). Similarly, Black (2010) indicated that one of the digital portfolios' advantages is "demonstration of technological skills" (p.120); and this agreed with pros of e-portfolios clarified by Heath (2005). As for Cappuccio and the colleagues (2016), they used e-portfolio to assess teachers' digital competence. Thus, it is about how do we comprehend and think of e-portfolios.

One more concern addressed through participants' responses is that related to consuming time needed for creating e-portfolios. This agrees with results indicated by Thibodeaux and her colleagues (2017); Clancy & Gardner (2017); and Heath (2005); and might be explained in this study by the lack of technological skills that was addressed as a challenge by the respondents. Montes (2013) indicated that the more complicated the program to be used, the more time needed for expertise and this adversely affects e-portfolio development process. As for Glor-Scheib & Telthorster (2006), they recommended the use of PowerPoint program as it is flexible and user-friendly. Whereas Clancy & Gardner, indicated that technical support provided for users was a critical factor to reduce time required for additional tasks during development process of e-portfolios.

Another concern pointed out by participants regarding degree of students' interest and desire to be involved in the development process of their own portfolios. This was found to be one of the factors that may contribute to stop using e-portfolios if students have low levels of interest (Thibodeaux et al., 2017). Referring to what previously mentioned about time needed to mastery a program that needs a kind of expertise; this may frustrate a student and thus causes poor engagement in e-portfolio development process (Montes, 2013). So, provision of technical support and training (Clancy & Gardner, 2017) or assistance for students as needed (Glor-Scheib & Telthorster, 2006) would be beneficial to overcome this challenge. As well, this may imply planning to use simple and easy programs, such as PowerPoint, for developing e-portfolios (Glor-Scheib & Telthorster) to ease students' participation. According to Black (2010), the more the students engage in overall creating process of their own e-portfolios, the more responsible and interest they are.

For the final concern reported by participants of the study regarding degree of parental' involvement and collaboration, Glor-Scheib & Telthorster (2006) viewed families to be as a resource for the students to accomplish developing their e-portfolios; that is, e-portfolios are a product of a collaborative efforts of students, parents, teachers, and other professionals. However, in Clancy & Gardner's (2017) study, degree and nature of parents' participation gradually

expanded from phase to phase in terms of accessibility to digital portfolios, sharing students' work and interacting with their projects. Of the results, it was reported the success of digital portfolios "in increasing communication and collaboration between staff and with parents" (p.98), as well, it was noted that parents had positive attitudes towards digital portfolios. Given the above, it seems that parents' degree and nature of participation may be affected with the purposes of creating e-portfolios. In her turn, Milman (2010) indicated that of the issues to be considered for creating digital portfolio using a specific approach is "the degree of skill and type of hardware and software required for the audience to view materials created with the chosen approach" (p. 77). So, one could assume that parents' technological skills might be a factor affects both degree and nature of their participation.

Conclusion and implications

In order to take advantages of available technology, and take a step forward to improve opportunities of educational inclusion of students with disabilities in our country; this study presents the idea of creating e-portfolios for students with disabilities at Jordanian special education institutions. The results represent feedback from the professionals working with these students about applicability and challenges associated with the proposed idea. Although overall feedback reflects positive perspectives towards e-portfolios, the participants concern about specific issues that may arise when developing them.

Careful consideration of the challenges and concerns raised beholds clear action plans to be in place and ready to go. Issues for stakeholders and decision makers to include in these plans are: (1) changing educational system to be reflective to this technological era; (2) changing available inclusion practices and policies; (3) raise awareness of digital ethics; (4) provision of needed technological software, hardware and equipment; and (5) provision of efficient and sufficient technological training and technical support for professionals, students, and parents. Hopefully, this would pave the way to bring the idea of e-portfolios to life.

Limitations and Future Research

One should note that the research findings must be interpreted and generalized considering the limitations of the time data were collected, the settings where the study was conducted, the instruments used for data collection and the sample from whom the data was collected. To go further steps forward towards bringing the idea of e-portfolios to life and to have better understanding of its effects on decision making for inclusion, other studies can be carried out to present other parties' opinions about e-portfolios' applicability and related challenges. Future samples might include teachers and principals at inclusive schools, students with disabilities from different categories and school levels, and parents of these students. Also, mixed-methods design and experimental research might be considered for further investigation of different objectives and uses of e-portfolios in the field of special education in Jordan.

Appendix

The Mini Workshop Content and Procedures

Topics

- A brief information about the idea of an e-portfolio:
    1. What is an e-portfolio.
    2. Types and uses of e-portfolios (showcase, learning, and assessment).
    3. content of e-portfolios.
- Displaying the example e-portfolio that was prepared for the purposes of the study.

Procedures

- One and a half hour was the period time needed to implement each of the mini workshops.
- The selected special education institutions were the places where the mini workshops were held within specific dates.
- Data show equipment was a needed requirement for the mini workshops that were held.
- Two researchers executed the mini workshops.

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