Research Article

The Extent to Which the Jordanian Inclusive Basic School Teachers Use the Constructivism Theory in Teaching

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Abstract

The current study aimed to explore of the extent to which the Jordanian inclusive basic school teachers use constructivism theory in their teaching. A qualitative approach of data gathering and analysis was used; classroom observations were conducted using the observation sheet of the New South Wales Quality Teaching Model. A small number of participants were selected using purposive sampling. The participants included four teachers in a specific four basic inclusive schools. One key finding was that the use of constructivist teaching was in low level. However, the overall score of use in Arabic language was in moderate level whereas in Mathematic was in low level. Future recommendations and directions for research, policy and practices are presented.

Keywords: constructivism theory, inclusive education, basic school, curriculum and instruction

1. Introduction

In recent years, the field of education in Jordan has witnessed serious attempts in the reform process in all fields. This was evident in holding conferences, seminars, forums and training workshops, which are often under the patronage of a Royal Highness (Sakarneh, Paterson & Minichiello, 2016). One of the most important fields addressed in the process of educational reform is the field of curricula and instructional methods, but in conjunction with that, there was also a movement and a government attention towards the integration of students with special needs in the regular school. In line with the global trend in the process of the full inclusion, the Ministry of Education (MOE) has since the beginning established a Directorate of Special Education, which is responsible of different categories of students with special education needs, where began to provide services to those students, from diagnosis stage to education and training. The number of partially included students with different special education needs reached 1008 students in 150 inclusive schools as of the end of March 2018. Among the projects implemented by the Ministry with the Higher Council for the Rights

of Persons with Disabilities, Mercy Corp, UNICEF and other international organizations; the project of the full inclusion through (4) schools distributed in the center, north and south regions and is expected during the next five years, 3830 schools will be integrated in this project (Mahases, 2018).

In Jordan, the education system has been heavily reformed in line with the global movement influenced by constructivist orientation (Sakarneh, 2007). Nevertheless, many essential challenges and issues are still hindering reform (Sakarneh, 2007; Sakarneh, Paterson & Minichiello, 2016). Studies conducted to assess the results of reforms have shown that students still exhibit low critical thinking skills. Moreover, since the reforms began, students' basic skills and concepts in mathematics and science have not improved (Anani & Al-Qaisee, 1994). This means that there is a gap between what the educational reform process is aiming for and what is actually applying in the classrooms. Furthermore, with the new situated form of teaching and learning practices (inclusive Education) and the demand and calls for using new method of teaching and learning (constructivism approach) that meet the education system reform, it is become inevitable to know to what extent this approach being practiced in the inclusive basic schools.

2. Statement of the Problem and the Study Question

Narrative Report related to quality of learning outcomes indicated that there is decline in students' scores in Science and Math (Ministry of Education, 2013). Results showed that majority of students' achievements are still below the expected level and that was an alarm for MOE to take an action (Ministry of Education, 2013). Furthermore, results indicated that the first three grades students showed low level in foundation skills in reading and mathematics (Ministry of Education, 2013).

A study conducted by Alnahar & Kishik (1994) showed that teachers are controlling classrooms and did not allow their students to express or direct themselves nor direct their own learning activities (Alnahar & Kishik, 1994). Most of the questions asked by these teachers were based on the memorization of fixed body of knowledge (Alnahar & Kishik, 1994). Because of that, the education system in Jordan has faced significant criticism and has been accused and responsible of graduating students who cannot be competitive and meet the economic, social, cultural, political and national challenges (Massaad et al., 1999; Oweidat, 1997). The Jordanian Ministry of Education describes quality teaching and learning as those practices needed to build a 'knowledge society' and that quality education is a cornerstone of a 'Knowledge Economy'. The concept of quality teaching and learning is part of the MOE's future vision for education (Sakarneh, Paterson & Minichiello, 2016). The MOE suggests that the student's role in the teaching and learning process has to be moved from the traditional transmission-reception role (teacher-centered) to a new constructivist role (student-centered). The student's role has to shift away from being a passive receiver of information expected to memorize information from textbooks and retain it until recalled at exam time (Sakarneh, 2014a; Sakarneh, 2014b). According to the MOE, the student must move to being a creative and active participant by debating and discussing, presenting ideas freely, criticizes and suggests preferences, and stays committed to the path of ever-increasing knowledge through understanding (Sakarneh, 2015). All the mentioned principles are the principles and concepts of the constructivism theory. Therefore, it is essential to know to what extent these principles and concepts are implementing in the inclusive basic schools in Jordan. In more specific, the problem is to examine, describe and analyze the extent to which the Jordanian inclusive basic school teachers use the constructivism theory in teaching. In order to reach this main aim and the objectives mentioned above, the study was guided by the main research question, which is: to what extent the inclusive basic school teachers use the principles and concepts of the constructivism theory in their daily teaching and learning practices?

3. Significance of the Study

The significance of the current study can be seen as the following:

1. The results of the study could be useful for the policy and decision-makers and other stakeholders in the MOE about the extent to which the inclusive basic school teachers using the constructivism theory in teaching as it part of the MOE's reform movement and the future vision and mission.
2. The results of this study could help the teachers' evaluation in order to reconsider teachers' preparation and in-service training in accordance with the elements and concepts of the constructivism theory, and provide educational supervisors with a measurement tool that can help them in evaluate teachers.
3. Enriching educational literature with recent study by which can contribute to teachers' education development program especially in the inclusive settings.

4. Study Objectives

The current study aimed to explore the extent to which the Jordanian inclusive basic school teachers use the constructivism theory in their daily teaching and learning practices.

5. Limitations of the Study

Any results, discussions and conclusions made in this study are based on a purposeful sample in a particular context and, therefore, limited to that sample. The participants (the teachers) in this study were identified by their supervisors in the MOE based on their annual reports and based on particular criteria. They had also received recommendations from their principals and colleagues. The participants were from selected inclusive basic schools. Therefore, the results may be generally applied to other teachers within basic schools in Jordan, and almost certainly not elsewhere. Accordingly, the sample used in the study not enough for the generalization of results. If the study has to be conducted again, a larger sample should be obtained and from different schooling years and for different subject areas. Another limitation is that the study conducted in the school year 2018-2019 second semester and one tool used to collect the data, which was the classroom observation by using the NSW Quality Teaching Model observation sheet.

6. Theoretical Framework and Literature Review

There has been a major debate in the field of education about the suitable teaching and learning theory and related strategies (Rowe, 2006; Steele, 2005). The most controversial theory is the constructivism theory and its related teaching and learning strategies as university scholars and many other educational stakeholders recommend them for education classes (Brooks & Brooks, 1999; Rowe, 2006; Steele, 2005). It is considering as a cure for the educational systems around the world, which are seeking for solutions to meet their new goals and visions in building 'Knowledge Societies' and eventually 'Knowledge Economy'.

Constructivist theory has gained great popularity in recent years; although its idea is not new, trends towards constructivism can be observed through the works of Socrates, Plato, and Aristotle whom wrote about knowledge information. Constructivist conceptions of learning have their historical roots also in the work of Dewey (1929), Bruner (1961), Vygotsky (1962), and Piaget (1980) (Olusegun, 2015). Constructivism is a method for teaching and learning based on the idea that cognition (learning) is the result of "mental construction" (Olusegun, 2015, p. 66). More specific, students learn by integrate new knowledge together with what they already know. Constructivism is a theory in learning and teaching found in psychology, which explains how people might acquire knowledge and learn based on their experiences, beliefs and attitudes (Olusegun, 2015, p. 66). "Piaget's theory of Constructivist learning has had wide ranging impact on learning theories and teaching methods in education and is an underlying theme of many education reform movements" regardless of the supported of contradicting research (Olusegun, 2015, p. 66). According to the

constructivism theory, the "role of the teacher is to be a facilitator of learning (rather than a director or an orchestrator), and to provide opportunities for individual learners to acquire knowledge and construct meaning through their own activities, and through discussion, reflection and the sharing of ideas with other learners with minimal corrective intervention" (Rowe, 2006, p. 3). The role of the student is to be a creative and active by debating and discussing, presenting ideas, criticizes and suggests preferences, and stays committed to the path of ever-increasing knowledge by understanding (Sakarneh, 2015).

Such significant theory in teaching and learning provoked different researchers in different parts of the world to follow, in the theoretical and practical levels. For example, a study conducted by AL Masahfeah (2018) aimed at investigating the degree of practicing constructive teaching by basic school teachers in light of some variables in Naour as the findings indicated that the degree of practicing constructive teaching by basic school English teachers was on the degree of middle. Also a study conducted by Doba, Yousef & Khadra (2016) to identify the degree of employment of constructivist teaching methods by classroom teachers in the first cycle of basic education. They found that there was a middle degree of employment the skills of constructivist teaching methods by classroom teachers on the total score of the employment questionnaire. Furthermore, Hirzallah (2016) conducted a study aimed to explore to what extent the mathematics teachers in Tulkarm use of constructivism theory in teaching. The results indicated that the teachers were highly using the constructivist theory in their daily teaching. However, Alzaaneen (2015) conducted a study aimed to identify the degree of employing the science teachers of constructivist instruction in their science lessons in Gaza government. The results showed that that the degree of constructivist practice of science teachers has been low in general. In addition, a study conducted by Habib (2015) aimed to know the extent to which the basic school teachers use of constructivist teaching and learning practices in Gaza Province. The researcher found that the total score of the teaching and learning practices of constructivist theory were significant. Another study conducted by Abu-Snaneh & Ayyash (2013) to explore the degree of which science and geography teachers implementing the principles of social constructivism theory in their daily teaching in the basic school in UNRWA, they clarified that the degree of implementation of these principles was (4,0195) with the percentage of (80,4) which is a high degree.

Some significant scholars went beyond that by building models of quality teaching and learning on the base of constructivism theory. For example, the New South Wales Department of Education and Training (Australia), Dr James Ladwig, and Professor Jennifer Gore from the University of Newcastle (Australia) worked on the NSW Quality Teaching Model (NSWQT Model) in its third incarnation (NSW Department of Education, 2003a). The roots of the NSWQT Model were published in 1996 by Fred Newmann and his associates. Their Wisconsin-based research project studied the relationship between what they called "authentic pedagogy" and student performance. That research arose from reform efforts seeking to increase student performance (Newmann et al., 1996, p.280). The research team created three main categories (or dimensions) for defining student performance for what they declared was authentic pedagogy. These were; the construction of knowledge; disciplined inquiry; and value beyond the school. Their underpinning theoretical perspective for this understanding was constructivism, from which they defined criteria for tracking what they called 'authentic academic achievement' (Newmann et al., 1996; Sakarneh, 1996).

The formative stage providing the basis for what later became the NSWQT Model occurred in Queensland between 1998 and 2000. During this time an extensive observational study of classroom practices was conducted in Queensland schools, the 'Queensland School Reform Longitudinal Study (QSRLS)', co-directed by James Ladwig of the University of Newcastle and Bob Lingard of the University of Queensland. Their study drew heavily on Newmann's research (Education Queensland, 2001; University of Queensland, 2001). Over three years, the Queensland researchers made detailed observations and statistical analyses of 975 classroom lessons in government schools. The study sought to investigate possible correlations between classroom-based management practices and enhanced student social and academic outcomes (Education Queensland, 2001; University of

Queensland, 2001).

The resultant model consisted of four dimensions encompassing 20 elements of what these researchers also called 'authentic pedagogy' (Education Queensland, 2001). The study found that the following main factors can influence productive pedagogy and subsequently students' performance: pedagogical practices, assessment practices, teacher attitudes and beliefs, the nature of the professional learning community, the quality of leadership practices, professional development, and system alignment and system support (Education Queensland, 2001).

In 2003, the model was re-contextualized and reshaped by Dr James Ladwig and Professor Jennifer Gore from the University of Newcastle, in consultation with, and on behalf of, the NSW Department of Education and Training (NSW Department of Education, 2003a). This became the NSWQT Model and it was intended to help the NSW Department of Education and Training reach the National Goals for Schooling in the Twenty-first Century, also known as the Adelaide Declaration (1999) (NSW Department of Education and Training, 2003b). In its final form, the NSWQT Model consisted of three dimensions of teaching and learning covering eighteen elements. The model was developed to be used as a framework for teachers to assess and evaluate, in a collegial manner, their professional practices and needs and to feed this into a professional development program for school improvement in NSW public schools (NSW Department of Education and Training, 2003a).

However, little research has been conducted to observe and to explore the applications and the effectiveness of the constructivist theory in inclusive settings. For example, an argument has been issued by Akpan & Beard (2016) whom were enthusiastic for using constructivist theory in inclusive settings; as they stated, "Constructivist teaching philosophy is all about accepting student autonomy where student thinking drives the lessons, where dialogue, inquiry, and puzzlement are valued and assessing student learning is in the context of teaching. Time has come to effectively explore our educational system and examine the core unit of the whole enterprise, the textbook, the classroom, a setting that is often dominated by teacher talk and students listen". (p. 392). Furthermore, the Vygotsky's socio-cultural theory has been involved in the context of inclusive practices and policy, for example Dixon and Verenikina (2007) stated " Vygotsky's theories need further exploration in their connection to the practice of special education, but they are a promising start in giving direction to new policy development, particularly as it relates to how to implement inclusion in terms of curriculum and pedagogy in the regular classroom." (p. 204). They also added, "Development of children with disabilities is qualitatively different from that of their normally developing peers and that they must be provided with psychological tools to overcome this qualitative difference and not develop secondary disability. They will only achieve their potential if they can be given tools and symbolic systems which will compensate for the blocking of the normal developmental path" (p. 205).

However, when talking about the effectiveness of constructivist theory in teaching students with special educational needs, few studies have addressed this subject. One of these studies, a study by Rowe (2006) claimed that despite the importance of the constructivist theory in the education of people with special needs, especially those with learning difficulties, teachers are implementing teaching strategies that did not based on the results of scientific research such as constructive theory. At the same time, the teachers indicated the importance of the constructivist theory in teaching and they should be training during the pre-service and in-service stages of their profession. However, the researcher stated that " in contrast to teacher-directed methods of teaching there is strong evidence that exclusive emphasis on constructivist approaches to teaching are neither initially nor subsequently in the best interests of any group of students, and especially those experiencing learning difficulties" (p. 1). In a discussion paper written by Steele (2005) to compare two paradigms of teaching (Constructivism or Behaviorism) in teaching students with learning disabilities, the researcher concluded that "Instructional decisions should be made based on the child's learning characteristics, the task, and the content rather than teaching from a pre-determined philosophy. The best teaching will often integrate ideas from constructivist and behaviorist principles." (p. 3). However, Stanovich (1994) indicate that direct instruction approach is more effective in teaching students with learning disabilities special in reading process. Furthermore, Mercer, Jordan & Miller

(1994) claimed that there are obstacles in implementing the constructivist theory in teaching mathematics to students with moderate and mild learning disabilities taking into account several factors related to the student and the teacher and the way of interaction between them and educational content all play a very important role in the teaching and learning process. Therefore, the current study comes to explore the extent to which the Jordanian inclusive basic school teachers use the constructivist theory in their daily teaching and learning process to discover the gap (if there any) between the vision and desires of the MOE and the real practices on the ground.

7. Methodology

7.1 Research Design

Qualitative research was used as the main paradigm of this study for several reasons. First, qualitative research gives significant concern to the 'meaning' of the phenomenon (Maxwell, 1996, p.17). Researchers in this arena have to make sense and gain a clear understanding of their participants' behavior and how the participants understand and interpret their actions within the context in which they are acting (Maxwell, 1996). Second, qualitative research occurs in a natural setting. The researcher in qualitative research has to spend sufficient time in the setting in which actions occur, whatever data collection techniques used (Bogdan & Biklen, 1998; Maxwell, 1996). In this study, the researchers used the observation technique to collect the data as teaching is an interactive process between the teacher and students and it is essential to observe the sights and the sounds of this interaction (Anderson & Burns, 1989). Medley and Mitzel found observation as a research tool essential, stating "certainly there is not a more obvious approach to research on teaching than direct observation of teachers while they teach and pupils while they learn" (Medley & Mitzel 1963, p. 247 quoted in Anderson & Burns, 1989, p.135). The researchers have attempted to provide a visual picture of the teachers' and students' actions and interactions in the classroom. Video-recording allowed the "capture [of] versions of conduct and interaction" in the classrooms (Health & Hindmarsh, 2002, p.103). Studying of the recordings in slow motion allowed analysis of the details of the classroom activities and interactions, enabling the researchers "to track the emergence of gesture, to determine where people are looking" (Health & Hindmarsh, 2002, p.103). "Video-recording can become a data base for further investigation into similar subjects" (Health & Hindmarsh, 2002, p.103). The researchers were able to capture actions and reactions, at the same time he was busy writing his field notes about actions that were not able to be captured by video.

7.2 The Sampling

Sample size in qualitative research is relatively small. Having a small number of individuals enables the researcher to understand in depth the context in which participants are acting and the influence of that context on their actions (Maxwell, 1996). In this study a small number of participants were selected using "purposive or judgment sampling" (Babbie, 2004, p.183). The participants included four teachers in a specific four basic inclusive schools. These schools were results of several projects implemented by the MOE with the Higher Council for the Affairs of Persons with Disabilities and Mercy Corps, UNICEF and other international organizations through four schools distributed in the north, central and south provinces. The participants in this investigation shared three characteristics: they are basic inclusive classroom teachers; they teach in public schools run by the MOE; and they have been recognized by their supervisors as effective teachers, having received excellent annual reports for more than two years according to their supervisors. Most teachers teaching in basic Jordanian schools are female, in line with the MOE policy to prefer women teachers in the first three classes (C1 to C3). All the teachers held Bachelor degrees and they were teaching all subjects for their grade. Table (1) shows the details of the participants. In addition, the table shows the included students with special needs with different categories of disabilities. As can be seen from the table, the

length of teaching experience varied from 5 years up to 15 years. Two teachers taught grade two, two taught grade three. The number of students in each class varied from 20 to 30. The schools were mixed (girls and boys). The subjects observed were mathematics and Arabic language. These subjects were selected specifically because literacy and numeracy are the main subjects at this stage as a foundation stage. Both subjects are good examples for teachers to demonstrate their teaching abilities by applying elements of constructivist theory. The researchers used four criteria to identify these teachers; supervisors' recommendations, principals' confirmations, colleagues' confirmations and parents' confirmations. Each school's and teacher's name given in the table are pseudonyms.

Table 1: Details of Participants

Participant	School Name	Grade	Number of Students	Number of Students With Special Needs and Category	Observed Subjects	Teaching Experience
Sahar	Sahar Basic School	Third	20	3 Learning Disabilities 1 Visual Impairment 1 Hearing Impairment	Mathematics and Arabic language	15
Rima	Rima Basic School	Second	25	2 Learning Disabilities 1 Mental Retardation 1 Asperger's Syndrome	Mathematics and Arabic language	5
Sara	Sara Basic School	Third	30	3 Learning Disabilities 1 Cerebral Palsy 1 Mental Retardation	Mathematics and Arabic language	11
Nour	Nour Basic School	Second	28	2 Learning Disabilities 1 Autism Spectrum Dis 1 Hearing Impairment	Mathematics and Arabic language	13

7.3 Instrument

To achieve the study subjects, the researchers used the NSW quality Teaching Model and its coding sheet. This sheet consisted of three dimensions and eighteen elements. The three main dimensions and the eighteen elements are:
   1) ***The Dimension of Intellectual Quality.*** This dimension "refers to pedagogy [that] treats knowledge as something that requires active construction and requires students to engage in higher-order thinking and to communicate substantively about what they are learning" (NSW Department of Education and Training, 2003b, p.9). This dimension consists of six elements: a) Deep knowledge; b) Deep Understanding; c) Problematic Knowledge; d) Higher-order Thinking; e) Metalanguage; and f) Substantive Communication.
   2) ***The Dimension of Quality Learning Environment***. This dimension "refers to pedagogy that creates classrooms where students and teachers work productively in an environment clearly focused on learning" (NSW Department of Education and Training, 2003b, p.9). This dimension consists of six elements: a) Explicit quality criteria; b) Engagement; c) High expectations; d) Social support; e) Students' self-regulation; and f) Student Direction.
   3) ***The Dimension of Significance.*** This dimension "refers to pedagogy that draws clear connections with students' prior knowledge and identities, with contexts outside of the classroom, and with multiple ways of knowing or cultural perspectives" (NSW Department of Education and Training, 2003b, p.9). This dimension consists of six elements: a) Background knowledge; b) Cultural knowledge; c) Knowledge integration; d) Inclusivity; e) Connectedness; and f) Narrative.
      The coding sheet was headed with basic information: teacher's pseudonym, subject, lesson topic, grade, the date, and the number of students in the class. The coding sheet was divided into three columns: the element, evidence or coding notes, and the score. In the end of the coding sheet,

the researchers specified a margin for his extra notes and comments about the teaching–learning process for each teacher.

Each element was broken down into five 'codes' or 'scores' with a descriptor given for each one. After the classroom observations, the videotapes were viewed several times and each element checked and assigned a score. Any notes taken on the coding scale/sheet during the observations also affected the score for each element on the coding sheet. When the researchers coded the classrooms practices, they scored only what he could see; where there was no evidence of an element, the score was evident. When there was difficulty in selecting between two scores, he considered whether the minimum conditions of the higher score been met and if these conditions were not met, the lower score was used (Sakarneh, 2007). Despite this, the researchers treated the scores of each element as assumptions not presumable indicators of the extent to which these elements were evident. These scores were a general guide, not standardized scores. To confirm that the given scores for each teacher were reliable, a sample of videotaped lessons were given to an independent person who was a supervisor, had knowledge of the NSWQT Model, and had experience in primary school teaching. There was an (81%) agreement between the researchers' scores and the independent scores (see Inter–Rater Reliability). Consequently, most of the data which have revealed that were heavily drawn from the classroom observations. According to the NSWQT Model's coding sheet, the given scores for each teacher have to be agreed scores between two or more observers or coders.

7.3.1 Validity and Reliability

The validity and reliability of the study tool were tested through a Longitudinal Study co-directed by James Ladwig of the University of Newcastle and Bob Lingard of the University of Queensland During by an extensive observations of classroom practices in Queensland schools, the 'Queensland School Reform Longitudinal Study (QSRLS)'. Their study drew heavily on Newmann's research (Education Queensland, 2001; University of Queensland, 2001). Over three years, the Queensland researchers made detailed observations and statistical analyses of 975 classroom lessons in government schools. In 2003, the model was re-contextualized and reshaped by Dr James Ladwig and Professor Jennifer Gore from the University of Newcastle, in consultation with, and on behalf of, the NSW Department of Education and Training (NSW Department of Education, 2003a). In its final form, the NSWQT Model consisted of three dimensions of teaching and learning comprising eighteen elements. Furthermore, a study conducted by Sakarneh (2007) "to examine the extent to which the NSW Quality Teaching Model (NSWQT Model) can be applied to the Jordanian primary school context" (p. v). The results showed "that most elements of the NSWQT model were evident in the practice of teachers identified as being 'quality teachers' in the Jordanian classrooms studied" (p. v).

In the current study, reliability of the data was achieved by a) clarifying the procedures, b) inter-rater reliability, and d) clarifying the researchers' perspectives. Reliability or consistency refers to the measure of issues related to the consistency of findings and the extent to which the findings can be "replicated" (Merriam, 1988, p.170). Human behavior cannot be inert; therefore, it is hard to keep the same findings if this study were to be repeated. Qualitative research only "seeks to describe and explain the world as those in the world interpret it, not to establish separate laws on peoples' actions" (Merriam, 1988, p.170). To insure the reliability of the scores given to each observed lesson for each teacher, a sample of videotaped lessons were given to an independent person, who has knowledge of the NSWQT Model and experience in primary school teaching. The researchers determined the percentage of agreement between themselves and the other rater by adding up the number of agreements and dividing them by the total number of items. The percentage was (81%). This result gave the researchers confidence about the reliability of the coding of classroom observations. Agreement between raters is defined as raters attributing the same score or scores with a difference of one unit between scores. A difference of more than one unit indicates no agreement between coders. For example, if one coder gave a score of two and the other coder gave score of four, this would indicate no agreement between coders. If one coder gave a score of two, and the other coder

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gave the same score or a score of three this would indicate coder agreement. The justification for this definition is that the distribution of five scores on this likert scale allows scoring decisions to be relatively close. In the Likert scale, with a narrow distribution of scores, coder decisions would be more absolute; scores of two and three approximate relatively similar decisions, as suggested by the NSWQT Model (NSW Department of Education and Training, 2003a). As the coding design of the model acknowledges relative distinctions, it is legitimate for the researchers to interpret coding agreement in this way.

Validity in qualitative inquiry means that the researcher interprets the participants' perspectives and experience that reflect the reality of the participants (Bogdan & Biklen, 1998; Merriam, 1988). The validity of the study, therefore, can be measured by the extent to which the participants' perspectives have been truthfully judged (Bogdan & Biklen, 1998). In this study there were several measures used to ensure the validity of the data. These measures were: thick descriptions and clarifying the researchers' perspectives.

In addition, the initial draft of the study instrument was written in English before it was translated into Arabic. In order to ensure additional validity of the instrument, the researchers ensured the validity of the Arabic version of the instrument by consulting a group of five referees specialized in curriculum and instruction (three of them are basic education supervisors from the Ministry Of Education and two are university professors) from Al-Balqa Applied University. Their role was to check whether the content of the instrument was accurate and suitable in terms of language clarity, to check the relevance of each element to the related dimension, which is part of the main model, and to provide any additional comments or corrections. The checklist was revised according to their feedback. To judge the extent of use the constructivist teaching, it was also agreed on the percentage of scores to be (60%) and accordingly the critical value as following:

a) If the arithmetic mean of the dimension and element or item is greater than (3.5), the application of constructive teaching is high.
b) If the arithmetic mean of the dimension and element or item is between (3-3.5), the application of constructive teaching is moderate.
c) If the arithmetic mean of the dimension and element or item is less than (3), the application of constructive teaching is low.

In order to assess the reliability of the model, internal consistency methods were computed using Cronbach's alpha. The reliability coefficient obtained was (0.80), which is considered sufficient for the purpose of the study.

7.4 Procedure

Permission was sought from the Jordanian MOE for the study in inclusive basic primary classrooms. The MOE gave permission for the research to conduct his study in the Jordanian basic schools. The Directorate of Education in Amman then approved this permission and sought from the Department of Educational Supervision because the research required classroom observations by video camera. Head of the Department of Supervision arranged meetings with the supervisors who were able to provide the researchers with the names of suitable teachers and their schools. Observation can make the participants suspicious, guarded and uncomfortable, so, to minimize this, the researchers met the participants several times before the actual observations. They met the students in their classrooms and talked to them about what he intended to do and why. The researchers used simple and clear language and sometimes used the local dialect. Some of the schools in this study are located in rural areas and the students, who were members of tribes, had just left their homes and still needed time to construct their understanding of formal language. Students in such contexts need someone who is able to talk to them with simple language and preferably in their own dialect. The researchers explained the reasons for using video filming and the reasons for his presence in the classroom prior to the actual observation. Each of the participants was happy with this explanation, and the researchers were invited to sit in the classroom.

The camera was arranged and fixed at an angle to capture the teacher and the students in front of the class in one lesson and in the back of the class in the other lesson for each teacher. Expressions, gestures, words of the students and the teacher were captured. The camera was mounted on a tripod and, once the camera started recording, the researchers positioned themselves some distance from the camera and out of view of the camera. During the lesson filming, the researchers observed the teaching and learning process and completed a coding sheet specified for this purpose. Eight lessons were observed and recorded on four videotapes two lessons for each teacher. Each lesson lasted (40) minutes. The total time for observations was (320) minutes.

7.5 Data Analysis

Demographic data were summarizing the research observed participants and their scores regarding their using the constructivist theory through the NSW model of quality teaching and the coding sheet. As the analysis take a qualitative way, the researchers present the data in a descriptive manner and support the scores with evidences that describing the teaching practices as they observed in the classrooms. However, the data collected were analysed and then expressed through means, standard deviations, percentages to clarify, and summaries the findings.

8. Results

The aim of the current study was to examine the extent to which the inclusive basic school teachers use the principles and concepts of the constructivism theory in their daily teaching and learning practices. To achieve this aim it was necessary to observe the teaching and learning activities in those classrooms. The results of the classrooms observations are presented in this section seeking to explore the links between the NSWQT Model as the tool of the study and the teaching and learning practices, which can be evidence by observing teacher actions, students' actions and interactions between students and the teacher in classrooms. It is expected that the analyzed data of classroom observations will then be positioned to refer back to the theoretical dimensions and elements of the NSWQT Model.

The results are restricted to what happened in the classroom observations of (8) lessons. The (8) lessons were taught by (4) teachers and each teacher observed over two lessons. The data in this chapter was derived from the analyses of the videotapes. The eighteen elements were reviewed and how they were demonstrated over the eight lessons was discussed. To confirm that the given scores for each teacher were valid and credible, a sample of videotaped lessons was given to an independent rater. This person was had knowledge of the NSWQT Model and had experience in primary school teaching. Since the main aim of this study was to examine the extent to which the inclusive basic school teachers use the principles and concepts of the constructivism theory in their daily teaching and learning practices the videotapes of observations were guided by a specific question for each item. For each item and the related question, a rating of (1-5) was given to each lesson; (5) being most evident, (1) being not evident. Table (2) shows the total scores and percentages for the (4) observed teachers in each element and dimension for the two observed subjects.

Table 2: Total score for the observed teachers for the two subjects on all elements and dimensions and the percentages

Intellectual Quality		
Element	Total Scores for (4) teachers	
	Arabic Language Lesson	*Mathematics Lesson*
Deep Knowledge	**14**	13
Deep Understanding	**16**	12
Problematic Knowledge	**8**	5

Higher-Order Thinking	**15**	**12**
Metalanguage	**12**	**10**
Substantive Communication	**15**	**13**
Total score for (4) teachers in each subject for all elements	**80/120 (66%)**	**65/120 (50%)**
Total score for (4) teachers by dimension	**145/240 (66.4%)**	
Quality Learning Environment		
Explicit Quality Criteria	**10**	**8**
Engagement	**14**	**13**
High Expectation	**14**	**14**
Social Support	**16**	**16**
Students' Self-Regulation	**11**	**11**
Student Direction	**4**	**4**
Total score for (4) teachers in each subject for all elements	**69/120 (57.5%)**	**66/120 (55%)**
Total score for (4) teachers by dimension	**135/240 (56.2%)**	
Significance		
Background Knowledge	**14**	**9**
Cultural Knowledge	**4**	**5**
Knowledge Integration	**11**	**8**
Inclusivity	**16**	**16**
Connectedness	**11**	**9**
Narrative	**11**	**4**
Total score for (4) teachers in each subject for all elements	**67/120 (55.8%)**	**51/120 (42.5%)**
Total score for (4) teachers by dimension	**118/240 (49%)**	

Table 3: Summary of the Total Scores and Percentages

Subject	Scores and percentages
Arabic language	216/360 (60%)
Mathematics	182/360 (50.5%)
Total Score And Percentage On The Whole Model	398/720 (55%)

It can be seen from the table (3) that the overall scores and percentages were: Arabic Language score is (216) out of (360) with a percentage of (60%), which is consisted with the cut off percentages and critical value specified before. For Mathematics, the score is (182) out of (360) with a percentage of (50.5%), which is, less than the cut off percentages and critical value specified before

In order to answer the main research question, which is; to what extent inclusive basic school teachers use the constructivist theory in their teaching? A descriptive statistics were used (means, standard deviations, percentages) as shown in table (4) and (5).

Table 4: Means, Standard Deviations and Percentages of Constructivist Theory Employment of the Study Sample in Arabic Language (by Dimension)

N	Dimension	Mean	SD	Percentage	Rank	Level of Use
1	**Intellectual Quality**	3.37	0.77	66%	1	Moderate
2	**Quality Learning Environment**	2.87	1.24	57.5%	2	Low
3	**Significance**	2.79	1.11	55.8%	3	Low
Total		3.01	1.04	60%		Moderate

The results in table (4) shows that the use of constructivist theory in teaching of Arabic Language over all were laying in the level of (moderate) with total percentage of (60%) and mean score of (3.01) with a standard deviation of (1.04). The dimension of intellectual quality ranked first in regards to the level use (moderate) with percentage of (66%) and mean score of (3.37) with a standard deviation of

(0.77). The dimension of quality learning environment laying in the second and (low) level of use with percentage of (57.5%) and mean score of (2.87) with a standard deviation of (1.24) and in the third rank laid the dimension of significant with percentage of (55.8%) and mean score of (2.79) with a standard deviation of (1.11) (low). Table (5) presents the means, standard deviations and percentages of constructivist theory employment of the study sample in Mathematics (by dimension).

Table 5: Means, Standard Deviations and Percentages of Constructivist Theory Employment of the Study Sample in Mathematics (by Dimension)

N	Dimension	Mean	SD	Percentage	Rank	Level of Use
1	Intellectual Quality	2.71	1	50%	2	Low
2	Quality Learning Environment	2.75	1.31	55%	1	Low
3	Significance	2.08	1.13	42.5%	3	Low
Total		2.51	1.06	50.5%		Low

One can observe the table (5) that the use of constructivist theory in teaching of Mathematics over all was in the low level with total percentage of (50%) and mean score of (2.51) with a standard deviation of (1.06). The dimension of quality learning environment ranked first in regards to the level use (low) with percentage of (55%) and mean score of (2.75) with a standard deviation of (1.31) (low). The dimension of intellectual quality laid in the second and low level of use with percentage of (50%) and mean score of (2.71) with a standard deviation of (1) (low) and in the third rank laying the dimension of significant with percentage of (42.5%) and mean score of (2.08) with a standard deviation of (1.13) (low).

It is essential in the qualitative research to confirm the results with descriptive observed examples as part of the validity of the results. Therefore, the researchers will illustrate by examples for each given score from (1-5). One elements which were observed and given score (1) was the element of *student direction related to the dimension of quality learning environment*; the structure of the lessons and the activities were determined, designated and dominated by the teacher. There was no evidence of student self-direction in the two lessons. The teacher chose the way the learning activities were conducted. The time frame for the lessons and the assessment tasks was dominated by the teacher, the students having no choice in this area. Another example for given score (2) was to the observed the element of *connectedness related to the dimension of significant* as the students and the teacher tried to connect what was being learned to the real world beyond the classroom, but the connection was superficial. For example, the teacher tried to connect what the students learned in the Arabic lesson with what they were going to do when they go on a trip or journey. That was the only connection made in either lesson and was not related to the core of the language lesson. For the given score (3) was to the element of *Higher-Order thinking related to the dimension of intellectual quality* as most of the students demonstrated higher-order thinking several times during the lessons. The teacher used open-ended and probing questions, asking the students: 'I am number 4, what is the number that is bigger than me by two digits'?; 'I am number 5, what is the number that is smaller than me by two digits'? And, 'Tell me how you answered this question'? The teacher asked the students to count the distance between the numbers by using the ruler. In the Arabic language lesson, the teacher asked the students to synthesize some sentences and match them with suitable pictures. For the given score (4) was to the element of *deep understanding related to the dimension of intellectual quality* as most students provided information, arguments and reasoning that demonstrated deep understanding for a substantial portion of the lessons. In the Arabic language lesson, the teacher asked the students to provide examples using the word 'cooperation'. Most students understood the meaning and gave examples in their own words and from their own experiences. In the mathematics lesson, the students were keen to answer the teacher's questions, and were able to transfer the knowledge of place value for different numbers. In the Arabic language lesson, the students understood the ideas of the lesson, the teacher asking them several times about

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them. They were able to explain and connect these ideas. In the mathematics lesson, the teacher asked the students to subtract some numbers and the students were able to do that. However, no score of (5) was given to any of the observed elements because it was no evident. Furthermore, two elements frequently scored (1) in all observed lessons which were the element of *Cultural Knowledge* which was not a feature of the all lessons and the other element was the element of *Student Direction* as the students had no choice in the classroom's activities, the teacher controlling the time, pace and criteria of assessment. The content and the structure of the lessons were determined and presented by the teacher.

9. Discussion

The current study aimed to explore the extent to which the inclusive basic school teachers use the Constructivist Theory in teaching. Three clear results became apparent from observing the teaching practices of four inclusive basic classroom teachers in Jordan. First, the three dimensions and the 18 elements of the NSWQT Model were used for describing both the teaching and the learning practices in the observed Arabic Language lessons more than in the Mathematics lessons. It became clear that the use of constructivist theory was visible in Arabic Language lessons more than in Mathematics Lessons especially in the first dimension which the intellectual quality. Second, the dimension 'quality learning environment' (and some of its elements) was more usable with the teaching and learning practices observed than the other two dimensions in Mathematics. From a closer examination of the teaching practices of the participants, it can be said that in general, the dimensions of 'intellectual quality' and 'quality learning environment' and some of their elements were more compatible with the existing teaching and learning practices than the dimension of 'significance'. Deliberate and conscious change would need to be undertaken for 'significance' to become as important a part of the Jordanian teaching-learning process as the MOE would envisage. Third, from a close examination of the applicability of the elements across the three dimensions, it can be concluded that the elements of student direction, cultural knowledge, problematic knowledge, and narrative were either applied at a low level or not at all during the (8) lessons observed.

Constructivist theory practices were visible in Arabic Language lessons more than in Mathematics Lessons. A justification for this may be that in Jordan, Arabic is the national and instruction language. Thus, teachers' and students' knowledge of and ability with the Arabic language are more connected to their real life, school life and everyday practices. This allows teaching in this subject to be more contextually connected and enable the students to engage in more complexes, deeper, subtle and/or sophisticated ways with the tasks. On the other hand, no difficulty that any student's facility with Arabic, teaching concepts in mathematics requires more special preparation than teaching Arabic (Sakarneh, 2007; Sakarneh, Paterson & Minichiello, 2016). It is claimed "that there are some knowledges of the world that are inherently more difficult than others, perhaps not because of their links with disciplinarity (that is, that mathematical knowledge is inherently more difficult than knowledge from social sciences), but rather due to our various tolerances or intolerances for them" (McConaghy, 2002, p.14). It is acknowledged by the MOE that knowledge of content is important in teaching particular subjects that knowledge of the subject is a crucial aspect in quality teaching process (Sakarneh, 2007; Sakarneh, Paterson & Minichiello, 2016). However, basic school teachers are taught at university to have a broad, quite superficial knowledge across all subjects, while secondary school teachers are taught a subject in depth to teach that particular subject. It may be the case that had this study had been conducted in the context of a secondary classroom, the results for teachers' engagement with and even explication of this dimension and some of its more 'difficult' elements may have been different (Sakarneh, 2007; Sakarneh, Paterson & Minichiello, 2016).

In the observed teachers' practices, the element of problematic knowledge was not observed to the degree the constructivist theory would prefer. This may be explained by the Jordanian context where the stakeholders consider knowledge from what appears to be an authoritative source to be

the 'truth' that cannot be questioned, as in the transmission (teacher-centered) approach. This then replicates itself in turn, where the teachers see themselves as the only source of knowledge and this knowledge is presented as fact and, as a fixed body of truth, is not open to questioning (Sakarneh, 2007; Sakarneh, Paterson & Minichiello, 2016). This element, therefore, presents some contextual hurdles to Jordanian basic schools: the stakeholders' perception to it still immature and the paucity of the MOE's explanation of it work against the MOE's overall vision of quality teaching to the extent that it is meant to be a consistently constructivist vision.

At the observed classroom level, the element of student-direction was very low and did not consist with the models' requirements. Students consider and accept authorities, such as parents and teachers, and students generally obey freely with their direction. Students in Jordanian schools generally come from extended families and from a generally 'collectivist culture'; this may explain this invisibility (Rudy, Grusec, & Wolfe, 1999, p.299). This contrasts with western culture, from which the model develops and in which student self-direction is respected. In western culture, as an "individualistic culture", children are taught to be autonomous and self-directed and children, ideally, are treated in an "authoritative" not "authoritarian" manner (Rudy et al., 1999, p.299).

The element of student self-regulation was also low in some of the observed lessons. Some of the observed teachers were teaching in overcrowded classrooms where they needed to keep continual control of student behavior to avoid interruptions. Student self-regulation had low congruence with the models' intentions: here the teacher regulated the students; the students rarely fully regulated themselves (Sakarneh, 2007; Sakarneh, Paterson & Minichiello, 2016). It can be argued that Jordanian culture promotes teacher-centered control and regulation of the classroom. The teacher's role as a firm classroom manager is culturally acceptable, with teachers expected to have power and authority over their students. In contrast, the constructivist theory has the teacher and students interacting more equally with the teacher spending most time and effort facilitating learning rather than regulating student behavior (Sakarneh, 2007; Sakarneh, Paterson & Minichiello, 2016).

In the classroom practices, the element of cultural knowledge was not a feature of the observed teaching and learning practices. The Jordanian community is comparatively homogeneous regards to religion, ethnicity, race and language. The classrooms observed for this research did not have different cultural groups that allowed the teachers' knowledge of different cultures to be observed (Sakarneh, 2007; Sakarneh, Paterson & Minichiello, 2016).

However, the overall result consistent with some of the literature (Rowe, 2006; Stanovich, 1994; Mercer, Jordan & Miller, 1994; Alzaaneen, 2015; Doba, Yousef & Khadra, 2016; Akpan & Beard, 2016; AL Masahfeah, 2018) which indicated that employment of constructivist in inclusive setting can face obstacles but not impossible. That can be achieved by considering some influence factors. However, the results also contradict earlier literature such (Snaneh & Ayyash, 2013; Habib, 2015; Hirzallah, 2016) which indicated that the employment of the constructivist theory in teaching were high and significant.

10. Conclusion

The aim of the current study is to explore the extent to which the inclusive basic school teachers use constructivism theory in teaching. The results showed that the use of constructivist teaching was in low level. However, the overall score of use in Arabic language was in moderate level whereas in Mathematic was in low level. A considerable attention should be given to the preparation of teachers in regards to employment of constructivism theory especially to those whom their classes have students with special needs. Future directions for research, policy and practices should be in the priority of the Jordanian Ministry of Education.

11. Recommendations and Future Directions

In the light of the study results, there are potential directions for further research, policy and

practices. These potential future directions are addressed below:

1. Conduct further research and studies on constructivist theory in teaching in different context with different research techniques.
2. Conduct further research in terms of teachers' knowledge of constructivist teaching principles especially in the inclusive settings.
3. The importance of develop teachers' competencies in using the constructivist teaching skills during pre-service and in-service training programs.

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