Teachers' Perceptions on the Impact of Flipped Learning on Student Learning and Teacher's Role in Jordanian Schools

Atef Mohammad Abuhmaid

Department of Curricula and Instruction, Faculty of Education, Hashemite University, Jordan

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Abstract The current study investigated Jordanian teachers' perception on the impact of flipped learning on students' learning, teachers' role, and challenges facing its implementation. Teachers' perceptions were investigated in respect to their sex, experience, and teaching subjects. Participant in the study were all the (126) teachers who had already implemented flipped learning and they were considered innovative in their schools as they were the first to implement flipped learning in their teaching practices in Amman, the capital of Jordan. All participants filled teachers' perception on flipped learning questionnaire, which consisted of (37) items in three dimensions: flipped learning's impact on students' learning, teacher's role, and challenges to its implementation. The study was conducted during the second semester of the academic year 2018/2019. Means, standard deviations, MANOVA, and Scheffe's test were used to answer the research questions. The results of the study showed teachers' overall positive attitude toward flipped learning model believing that it improves student learning and transforms teachers' role. Additionally, the results showed that female teachers had stronger views that flipped learning improves students' learning, transforms teachers' roles in the classroom, and faces challenges.

Keywords Flipped Learning, Teacher's Role, Teachers' Perception, Educational Trends

1. Introduction

Significant advances in digital technology have led to fundamental changes in various aspects of our lives. In education, technology has paved the way for new teaching strategies and models because of the new learning opportunities it creates for students. However, this can create a dilemma for teachers who are still stuck in traditional perception of education, especially in terms of the roles of teachers and students in learning. Thus, pervasiveness of new technology in students' lives has challenged the traditional role of the teacher especially in term of the content and its delivery. There is a vast amount of information on the internet and various digital tools have make sharing and delivering content effortless.

Modern technology has provided opportunities for students to learn beyond the traditional temporal and spatial limits of the classrooms. Classrooms are no longer immune to changes brought about by modern technologies thus; learning is no longer confined to what happens in the classroom. Accordingly, the significant learning opportunity for students beyond classrooms has challenged teachers and education systems to redefine their roles. The fundamental changes brought by the pervasiveness of new technologies require teachers to rethink and reposition themselves to the learning process. The roles of teachers, students, and the technology itself need to relate properly to each other in the new educational landscape. Therefore, new roles have emerged for teachers as facilitators, guides, mentors, orchestrators [1], and designers of learning experiences [2]. However, these roles of the teacher also require fundamental and necessary changes in students' roles and understanding of learning requiring them to reclaim responsibility of their learning [3].

1.1. Flipped Learning

New teaching strategies and models have emerged due to the widespread of digital technology. E-learning, mobile learning, MOOCs, blended learning, and flipped learning are only few examples of new trends in education that rely heavily on digital technology. Flipped learning,
which has gained increasing attention since the inception of the term around 2011 [4], relies on digital technologies in order to redesign learning. It is introduced as an innovative approach to teaching and learning especially in light of the advancement and ubiquitousness of digital tools [5-8]. The model relies on the power of new technologies in order to provide students with the content and materials in digital formats making them accessible outside the classroom paving the way to class to be more engaging and active.

One of the most important principles underpinning flipped learning is its attempt to redefine the role of classrooms (group space) and homes (individual space) in the learning process [6, 9, 10]. The model relies on technology-enhanced instruction outside the classroom in order to maximize students' engagement and learning in the group space where students interact directly with other students and the teacher [8]. It emphasizes that when students come to the classroom they should be ready for learning [11].

A large body of research has explored flipped learning and its impact on teaching and learning worldwide [9, 10, 12-17]. A study conducted by [8] aimed at investigating the impact of flipped learning on improving learning showed that flipped learning supports the employment of active learning activities and it opens the way for the learner to choose what and how to learn. In Singapore, [38] conducted a qualitative study on teacher perception on the potential of flipped classroom pedagogical practice in enhancing classroom interactions. In addition, Butt [18] conducted a study aimed at exploring students' perceptions on flipped learning by conducting a descriptive study at the Australian National University, which showed positive attitudes among students towards flipped learning compared to traditional teaching.

In flipped learning, the group space activities are carefully designed in order to enable students to utilize the knowledge and understanding they gained in the individual space at home. When students come prepared and ready to the classroom, they can be better in integrating newly acquired knowledge and skills into their prior knowledge enabling them to tackle tasks and learning activities effectively [19]. Furthermore, in-class time is freed from lecturing and information transmission in flipped classroom. The saved time can be invested in improving students’ higher order thinking abilities [20]. Thus, students engage with higher order activities in the group space and they improve their learning through interacting with others resulting in better problem-solving, analyzing, discussion, and debates [21]. The teacher is present in the group learning space and ready to guide and help when needed [7]. The presence of the teacher in the classroom can be crucial to students to accomplish tasks by providing timely helpful assistance [22]. Therefore, instead of lecturing and being the sole provider of knowledge, according to Butt [23], teachers may use classroom time to allow students to apply and discuss what they acquired by watching videos. Instead of merely transferring lecture notes to the notebooks of the students without passing through their brains [24], teachers can engage students building on the prior knowledge of the subject that they developed at home. However, the success of flipped learning implementation relies heavily on the role of the teacher and his/her ability to design new learning experiences benefiting from the power of the digital tools.

1.2. Teacher’s Role and Perception

Teachers are a corner stone in the learning process. They are integral to the success of educational initiatives related to classroom practices because they are not passive accepters of plans created at the upper levels of education systems [25]. Instead, teachers are the final arbiters of classroom practices [26, 27]. According to [2], teachers discover how to make productive connections between themselves, their learners, and their subject. They assume a crucial role in designing classroom environments that encourage students to become active, self-motivated learners [28]. Therefore, teacher related factors, such as their beliefs and attitudes [29-31] as well as their competence and skills [32], are considered essential to the success of educational practices.

Efforts to implement initiatives into schools must take factors related to the teacher into account as they outweigh factors related to other levels of the education systems such as school leadership, educational directorates, and ministry of education [33, 34]. According to [28], decisions made each day in the classroom and teacher’s instructional practices are associated with teachers’ perceptions.

Teachers are significant social agents as they shape the quality of students’ intellectual and social experiences [35, 36]. In respect to new technologies, teachers’ perceptions are a key factor to their adoption and implementation. When teachers have positive attitudes toward a new technology or new approach, they are more likely to search for ways to use them in their teaching. On the other hand, although technology might be present in the classroom, teachers might not use them properly because of their negative attitudes. Thus, negative attitudes might be the reason behind the failure to integrate technology and other innovative ideas properly in the classroom [37] rather than the failure of the technology itself. Nevertheless, teachers’ perceptions on educational initiatives and practices are not often investigated. In Jordan, like many other developing countries where top-down educational policy is predominant, teachers’ voices, in respect to future educational directions, are least heard.

1.3. Innovative Teachers
Teachers, according to the categorization of [25], fall into five main categories in respect to their uptake of innovations in schools: innovators, early adopters, early majority, late majority, and laggards. Innovators are the teachers who are obsessed with seeking information about new ideas, trying to find better ways to do things. They do not wait until new ideas (e.g. flipped learning) are imposed on them. They are known in their schools by their innovativeness and relentless search for new teaching ideas.

Innovative teachers are a main driver for school change especially in teaching practices so; their creative ideas are certainly the nucleus for educational reform [39]. They are the ones who always search for new ideas in order to improve their teaching [25]. They draw the lines for other teachers and set the compass for future directions.

1.4. Purpose and Significance of Research

The present study aimed to shed light on teachers' perception on the impact of flipped learning on students' learning, teacher's role, and challenges facing the implementation of flipped learning in Jordanian schools by trying to answer the following research questions:

1. What are the perceptions of teachers on the impact of flipped learning on students' learning?
2. What are the perceptions of teachers on the impact of flipped learning on teachers' role?
3. What are the perceptions of teachers on the challenges facing the implementation of the flipped learning?
4. Are there significant differences at the level (α=0.05) in the teachers' perceptions on flipped learning model related to: sex, experience and teaching subject?

2. Materials and Methods

In this section, the research design, participants, and data collection instruments will be described.

2.1. Research Method

In order to answer the research questions, descriptive research approach was used and a survey was implemented for descriptive analysis.

2.2. Research Population and Sample

The (126) male and female teachers who had implemented flipped learning in the last two years were contacted and asked to participate in the study.

The study was conducted during the second semester of the academic year 2018/2019. Table (1) shows the demographic characteristics of the participants.

| Table 1. Demographic Characteristics of Participants |
|-----------------------------------------------------|
| **Variable** | **%** | **No.** |
| Sex          |       |        |
| Male         | 42.8  | 54     |
| Female       | 57.2  | 72     |
| Total        | 100   | 126    |
| Experience   |       |        |
| Less than 5 years | 46.8 | 59     |
| 5 years- Under 10 | 31.7 | 40     |
| 10 – 15 years | 20    | 25     |
| 15 years and above | 1.5  | 2      |
| Total        | 100   | 126    |
| Subject      |       |        |
| Humanities   | 51.6  | 65     |
| Scientific   | 23    | 29     |
| Languages    | 25.4  | 32     |
| Total        | 100   | 126    |

2.3. Data Collection Tool

To answer the research question, the researcher developed a questionnaire based on the literature and previous studies in order to capture teachers' perception of flipped learning. To ensure the validity of the instrument, a panel of (10) faculty members at the Faculty of Education were consulted and the feedback ensured clarity and internal consistency requiring minor changes mainly in respect to the wording of three items and omitting one item. The final version of questionnaire consisted of two parts: the first part collected demographic information about participants regarding: school, sex, experience, teaching subject. The second part consisted of (37) items. The responses to the scale were measured on a four-point Likert scale ranged as follows: 4= strongly agree, 3= agree, 2= disagree, and 1= strongly disagree. The questionnaire consisted of three dimensions including the impact of flipped learning on student learning, the role of the teacher, and challenges face the implementation of flipped learning in Jordanian schools. Additionally, the overall coefficient reliability for the (37) items was (0.91) on Cronbach's alpha. Thus, the questionnaire was considered suitable for the purposes of the current study.

Means, standard deviations, MANOVA, and Scheffe's test were used to answer the research questions.
2.4. Procedure

As flipped learning model is a new and unpopular among teachers in Jordan, private educational governorate in Amman, the capital of Jordan, was contacted in order to identify schools that had experiences with flipped learning implementation. Accordingly, schools in the six educational governorates in Amman were consulted in order to identify teachers who had implemented flipped learning in their teaching. The initial contacts revealed (126) male and female teachers who had implemented flipped learning and they were contacted through their principals and asked to answer the questionnaire.

3. Findings

The current study aimed at examining teachers' perception on flipped learning. In this section, the findings are presented.

3.1. Teachers' Perceptions on the Impact of Flipped Learning on Students' Learning

The first research question was "What are the perceptions of teachers on the impact of flipped learning on students' learning?" To answer the question, means, standard deviations, ranks and levels were calculated as shown in table (2).

Table (2) shows that, overall, teachers participating in the study gave positive responses of strongly agree and agree to the items about the impact of flipped learning on students' learning. The overall rating for this dimension was high with a mean of (3.01). The ranking of items in this dimension shows that the highest mean (3.33) was for the item "Flipped learning improves student's attention during class time." The second and third items were "Flipped learning improves student's self-confidence coming to class with basic understanding" and "Flipped learning makes learning more enjoyable" with means of (3.31) and (3.25) respectively. On the other hand, the least two items were "I think flipped learning is better than traditional teaching for students" with a mean of (2.62), and "Students benefit from their time outside classes" with a mean of (2.48).

Apparently, items related to improved attention, self-confidence, enjoyment, preparedness, improved achievement, the benefit of active learning, overcoming shyness, flexibility of learning, improved interaction, and various aspects of students' development, all attracted higher rating by teachers. On the other hand, items regarding cooperation, motivation, student centric learning, creativity, higher order thinking, benefiting from time outside classes, all attracted medium rating by teachers.

| Item                                                                 | Rank | Mean  | SD    | Level   |
|----------------------------------------------------------------------|------|-------|-------|---------|
| Flipped learning improves student's attention during class time      | 1    | 3.33  | .577  | High    |
| Flipped learning improves student's self-confidence coming to class with basic understanding | 2    | 3.31  | .687  | High    |
| Flipped learning makes learning more enjoyable                        | 3    | 3.25  | .592  | High    |
| Flipped learning prepares students' mentally for the class           | 4    | 3.18  | .784  | High    |
| Flipped learning can improve students' achievement                   | 5    | 3.17  | .760  | High    |
| Students benefit from active learning in the classroom               | 6    | 3.14  | .807  | High    |
| Flipped learning can help overcome students' shyness                 | 7    | 3.11  | .949  | High    |
| Flipped learning makes learning more flexible                        | 8    | 3.09  | .704  | High    |
| Flipped learning can improve students' interaction in classes        | 9    | 3.06  | .936  | High    |
| Flipped learning enables students' various aspects of development    | 10   | 3.03  | .758  | High    |
| Flipped learning encourages cooperative learning among students      | 11   | 2.97  | .748  | Medium  |
| Flipped learning improves students' motivation to learn              | 12   | 2.95  | .809  | Medium  |
| Flipped learning makes learning more students-centric                | 13   | 2.94  | .767  | Medium  |
| Flipped learning improves students' creativity                       | 14   | 2.85  | .738  | Medium  |
| Flipped learning improves students' higher order thinking skills     | 15   | 2.80  | .693  | Medium  |
| I think flipped learning is better than traditional teaching for students | 16   | 2.62  | .618  | Medium  |
| Students benefit from their time outside classes                     | 17   | 2.48  | .807  | Medium  |
| Overall                                                              |      | 3.01  | .748  | High    |
3.2. Teachers' Perceptions on the Impact of Flipped Learning on Teacher's Role

To answer the second research question, "What are the perceptions of teachers on the impact of flipped learning on teachers' role?" means, standard deviations, ranks and levels were calculated as shown in table (3).

Table (3) shows that overall, teachers participating in the study gave positive responses of strongly agree and agree to the items about flipped learning's impact on teachers' role. The overall level for this dimension was high with a mean of (3.09). The ranking of the items in this dimension shows that the highest item was "Flipped learning helps teachers make better use of class time" with a mean of (3.34). The second item was "Flipped learning enables teachers to follow students' learning beyond classrooms" with a mean of (3.27). The only two items in this dimension with medium level were "Flipped learning enables me to help struggling students" and "Flipped learning makes my job easier" with means of (2.87) and (2.60) respectively.

3.3. Teachers' Perceptions on challenges Facing the Implementation of Flipped Learning

The third research question was "What are the perceptions of teachers on the challenges facing the implementation of the flipped learning?" To answer this question, means, standard deviations, and ranks of responses are presented in table (4).

In table (4), teachers reported an overall high rating of to the items in the "challenges face the implementation of flipped learning" dimension with a mean of (3.02). The ranking of the items in this dimension shows that the highest mean score was (3.37) for both items "Parents do not have enough knowledge and understanding of flipped learning" and "Students' parent's awareness can influence the implementation of flipped learning." On the other hand, the least item considered as a challenge for flipped learning was "Flipped learning needs more time to prepare learning activities" with a mean of (2.63).

| Item                                                                 | Rank | Mean | SD   | Level |
|----------------------------------------------------------------------|------|------|------|-------|
| Flipped learning helps teachers make better use of class time        | 1    | 3.34 | .812 | High  |
| Flipped learning enables teachers to follow students' learning beyond classrooms | 2    | 3.27 | .833 | High  |
| Flipped learning enables better class management                      | 3    | 3.24 | .784 | High  |
| Flipped learning saves teachers' efforts (by lecturing) inside the classroom | 4    | 3.22 | .828 | High  |
| Flipped learning liberates teachers from dull routines               | 5    | 3.13 | .794 | High  |
| Flipped learning improves teacher-student communication               | 6    | 3.06 | .936 | High  |
| Flipped learning enables me to help struggling students              | 7    | 2.87 | .790 | Medium|
| Flipped learning makes my job easier                                  | 8    | 2.60 | .841 | Medium|
| Overall                                                              | 3.09 | 0.827|      | High  |

| Item                                                                 | Rank | Mean | SD   | Level |
|----------------------------------------------------------------------|------|------|------|-------|
| Parents do not have enough knowledge and understanding of flipped learning | 1    | 3.37 | .786 | High  |
| Parents' awareness can influence the implementation of flipped learning | 1    | 3.37 | .786 | High  |
| Flipped learning requires teacher preparation programs to prepare teachers | 2    | 3.25 | .789 | High  |
| School principals have important role in the implementation of flipped learning | 3    | 3.21 | .864 | High  |
| The internet available does not support the implementation of flipped learning | 4    | 3.17 | .827 | High  |
| Teachers' traditional thinking hinders the implementation of flipped learning | 5    | 3.01 | .764 | High  |
| School infrastructure impact the implementation of flipped learning    | 6    | 2.83 | .989 | Medium|
| Flipped learning needs changes in current regulations and legislations  | 7    | 2.75 | .777 | Medium|
| The current curricula do not allow for the implementation of flipped learning | 8    | 2.63 | .817 | Medium|
| Flipped learning needs more time to prepare learning activities        | 9    | 2.63 | .817 | Medium|
| Overall                                                              | 3.02 | 0.821|      | High  |
3.4. Teachers' Perceptions on the Impact of Flipped Learning in Respect to Sex, Experience, and Teaching Subjects

The fourth research question focused on teachers' perceptions on flipped learning considering sex, experience, and teaching subjects.

For the sex variable, means and standard deviations are presented in Table (5) for the three dimensions in the questionnaire (students' learning, teacher's role, and challenges).

Table 5. Means, standard deviations, and ranks of teachers' responses on the "challenges face the implementation of flipped learning"

| Dimension            | Sex      | Mean | SD  | N  |
|----------------------|----------|------|-----|----|
| Student learning     | Male     | 49.07| 5.13| 54 |
|                      | Female   | 52.80| 5.34| 72 |
| Teacher's role       | Male     | 26.01| 3.55| 54 |
|                      | Female   | 28.41| 3.17| 72 |
| Challenges           | Male     | 27.68| 4.06| 54 |
|                      | Female   | 31.59| 3.59| 72 |
| Overall              | Male     | 102.77| 10.59| 54 |
|                      | Female   | 112.81| 9.82| 72 |

Table (5) shows mean scores of female and male teachers' perceptions. Differences appear in all three dimensions of the questionnaire. The overall mean score of female teachers was (112.81) with (9.82) standard deviation while the mean for male teachers was (102.77) with (10.59) standard deviation. Wilks' Lambda was used to test whether the differences are statistically significant (Wilks' Lambda=0.782, F=11.341, p=0.00). The results suggest that the sex variable was significant determinant of teachers' perception on the effectiveness of flipped learning on student learning, teachers' role, and the challenges face flipped learning. In order to test the significance of differences between male and female teachers, Multivariate analysis of variance (MANOVA) was carried out as shown in Table (6).

Table (6) shows significant differences between male and female teachers in their perceptions on flipped learning in all three dimensions of the study. In both dimensions of the study, students' learning and teacher's role, female teachers had a stronger view that flipped learning can improve students' learning and transforms teacher's roles with a significance (p=0.00) between male and female teachers in both dimensions. However, female teachers also had stronger views regarding the challenges face the implementation of flipped learning in Jordanian schools.

Table 6. Means, standard deviations, and ranks of teachers' responses on the "challenges face the implementation of flipped learning"

| Source       | Dependent Variable | Type III Sum of Squares | df | Mean Square | F    | Sig. | Partial Eta Squared |
|--------------|--------------------|-------------------------|----|-------------|------|------|---------------------|
| sex          | Student Learning   | 429.653                 | 1  | 429.653     | 15.546 | 0.000 | .111                |
|              | Flipped on Teachers' role | 177.463               | 1  | 177.463     | 15.894 | 0.000 | .114                |
|              | Challenges         | 472.239                 | 1  | 472.239     | 32.623 | 0.000 | .208                |
|              | Overall            | 3111.482                | 1  | 3111.482    | 30.128 | 0.000 | .195                |
| Error        | Student Learning   | 3426.981                | 124| 27.637      |      |      |                     |
|              | Flipped on Teachers' role | 1384.481               | 124| 11.165      |      |      |                     |
|              | Challenges         | 1794.968                | 124| 14.476      |      |      |                     |
|              | Overall            | 12805.986               | 124| 103.274     |      |      |                     |

Table 7. Means and standard deviations of teachers' perceptions on flipped learning in respect to their teaching experience on all three dimensions

| Dimension       | Experience          | Mean | SD  | N  |
|-----------------|---------------------|------|-----|----|
| Student Learning| Less than 5 years   | 51.372| 5.32366| 59 |
|                 | 5 years- Under 10   | 51.850| 5.56799| 40 |
|                 | 10 – 15 years       | 49.889| 6.00854| 27 |
|                 | Total               | 51.2063| 5.55455| 126|
| Teacher's role | Less than 5 years   | 27.932| 3.38793| 59 |
|                 | 5 years- Under 10   | 27.1750| 3.60119| 40 |
|                 | 10 – 15 years       | 26.5185| 3.67288| 27 |
|                 | Total               | 27.3889| 3.53491| 126|
| Challenges      | Less than 5 years   | 30.2373| 4.02723| 59 |
|                 | 5 years- Under 10   | 30.0750| 4.17801| 40 |
|                 | 10 – 15 years       | 29.0000| 4.86747| 27 |
|                 | Total               | 29.9206| 4.25883| 126|
|                 | Less than 5 years   | 109.5424| 10.81717| 59 |
|                 | 5 years- Under 10   | 109.1000| 10.52177| 40 |
|                 | 10 – 15 years       | 105.4074| 13.12150| 27 |
|                 | Total               | 108.5159| 11.28449| 126|
3.5. Experience Variable

In order to examine teachers' perceptions on flipped learning according to their teaching experiences, means and standard deviations were calculated and presented in Table (7).

Table (7) shows the Multivariate tests for teaching experiences variable. The table shows no significant differences between teachers' perceptions on the impact of flipped learning in respect to their teaching experiences (Wilks' Lambda=0.961, F=820, p=.555).

3.6. Teaching Subjects Variable

In order to examine teachers' perceptions on flipped learning according to their teaching subjects, means and standard deviations were calculated and presented in Table (8).

Table (8) shows apparent differences in the means of teachers' perceptions according to their teaching subjects. In order to examine the significance of the differences, Wilks' Lambda was carried out which revealed statistical differences between teachers on the combined dependent variables (Wilks' Lambda=.908, F=1.99, p=.048). In order to determine to which teachers these differences belong, Multivariate analysis of variance (MANOVA) was used as shown in Table (9).

### Table 9. MANOVA for differences between teachers’ perceptions on flipped learning in respect to their teaching subjects

| Source          | Dependent Variable | Sum of Squares | Mean Square | F  | Sig. | Partial Eta Squared |
|-----------------|--------------------|----------------|-------------|----|------|---------------------|
| Teaching subject| Student learning   | 15.342         | 7.671       | .246 | .783 | .004                |
|                 | Teacher's role     | 115.159        | 57.580      | 4.895 | .009 | .074                |
|                 | Challenges         | 67.107         | 33.553      | 1.876 | .158 | .030                |
| Error           | Student learning   | 3841.292       | 123         | 31.230 |     |                     |
|                 | Teacher's role     | 1446.785       | 123         | 11.762 |     |                     |
|                 | Challenges         | 2200.099       | 123         | 17.887 |     |                     |
|                 | Total              | 15436.441      | 123         | 125.500 |     |                     |

### Table 10. MANOVA for differences between teachers’ perceptions on flipped learning in respect to their teaching subjects

| Dependent Variables | Teaching Subject | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |
|---------------------|------------------|-----------------------|------------|------|------------------------|
|                     | (I)                           | (J)                          |
| Teacher's role      | Humanities        | Scientific              | 1.8414     | .76587 | -.0564–3.7391          |
|                     | Languages         | -2.6789-*               | .87931     | .011 | -4.8577–.5001          |
|                     | Languages         | Scientific              | -1.9118    |     | -4.8577–.5001          |
|                     | Languages         | Languages               | 1.3411     | .87931 | -4.8577–.5001          |
Table (9) shows no significant differences between the two dimensions of the questionnaire regarding the teaching subject; "students' learning" (p=.783) and "challenges face the implementation of flipped learning" (p=.158). However, the impact of flipped learning on the dimension "teacher's role" showed significant differences (p=.009). In order to examine to which subject the differences belong, Scheffe’s test was used, and Table (10) shows the results.

Table (10), revealed significance differences between language teachers and scientific subjects teachers (p=0.011) in the "Teachers role" dimension. This suggests that languages teachers have stronger perception that flipped learning influences their role as teachers than science teachers. However, the results showed no significant differences between science teachers and humanities teachers.

4. Discussion

In this section, findings of the study are discussed in light of previous literature and practices.

4.1. Flipped Learning on Student Learning

Teachers believed in the potential of flipped learning to improve student's engagement and self-confidence during class time because they come to class with basic understanding of concepts allowing them to be active learners and have self-confidence to participate in learning activities. This confirms findings from previous studies [4, 40, 41] which pointed to the positive impact of flipped learning on students' motivation to learn and engagement because they come to the class mentally prepared with basic understanding of new concepts.

On the other hand, as flipped learning was new to teachers, they were still uncertain whether flipped learning is better than traditional teaching for students. However, this could be understood in light of the uncertainty that accompany newly implemented initiatives and, according to [28], the impact of the support teachers receive from school culture which influences their perceptions. However, flipped learning was still a new concept implemented voluntarily within a traditional setting that has been dominant for a long time; therefore, traditional teaching practices still overshadow new ones.

The impact of flipped learning on students' attention, enjoyment, achievement, and behavior in the classrooms, it was hard to notice its impact on issues such as creativity, higher order thinking in a short period.

In flipped learning, students are expected to invest some of their time before they attend the class to benefit from what was made available for them online by the teacher, so they can come prepared and ready for the related learning activities and tasks designed by the teacher. However, teachers were uncertain of students' proper use of the materials online. This can be understood considering that the flipped learning was not institutionalized yet, so, teachers did not have access to sophisticated and smart digital tools to track and follow students' online activities. The availability of such tools may benefit both teachers and students in this respect.

4.2. Flipped Learning on Teachers' Role

Overall, teachers believed that flipped learning model impacts teachers' role in teaching and learning. The only two items in this dimension with medium level were "Flipped learning enables me to help struggling students" and "Flipped learning makes my job easier."

Innovative teachers who are willing to take the challenge and adopt new teaching strategies may spend extra effort and time into their new teaching practices. For other teacher who might be reluctant to adopt new initiatives, this must be clarified not to feel frustrated and overwhelmed.

In flipped learning, teachers shift lecturing from the group space in classrooms to the individual space at home, inevitably, fundamental transformation to their traditional role occurs. Class time is the part of flipped learning where teachers' role is transformed and freed from lecturing. The saved class time helps teachers to perform their fundamental and valuable role during the class becoming the guide, monitor, and facilitator of student learning helping them to make sense of what they learn prior to the class time [40].

4.3. Challenges Faced Regarding the Implementation of Flipped Learning

Overall, teachers believed the implementation of flipped learning faces challenges. The two main items in this dimension were related to parents' role and awareness. This indicates that the culture on adopting innovative ideas can face serious challenges from the society including parents. According to [42] and [43], engaging parents in children’s learning has strong influence on student achievement, engagement, motivation and school completion. Parents' crucial role requires special efforts to explain flipped learning to them and clarify the role of teachers and students to them in order to play a positive and supportive role especially when students are at home. The least item considered as a challenge for flipped
learning was the time needed to prepare learning activities. Teachers involved in flipped learning are usually the innovators who always search for new ideas and innovations to improve their practices [25]. These teachers voluntarily put extra time and efforts needed to improve their practices.

4.4. Teachers' Perceptions in Respect to Their Sex, Experience and Teaching Subject

Female teachers had stronger perception than male teachers that flipped learning can affect student's learning and transform teacher's role in education. Female teachers also showed stronger views that the implementation of flipped learning faces challenges more than male teachers, which might be due to home responsibilities and commitments that often collide with the extra time needed for preparing learning activities. Traditionally, in Jordan and the Arab World, females are mainly responsible for home duties. Thus, adopting flipped learning can place extra burden on female teachers in particular.

Language teachers also had stronger perception regarding the implementation of flipped learning can influence teacher role than science teachers. This might be due to the role's language teachers might play outside classrooms through online activities designed for students. Considering the wealth of language resources available online, language teachers might find themselves required to guide students through the resources in order to benefit from what is already available which strengthens students' language skills.

5. Conclusions

Teachers are fundamental to adopting and implementing educational initiatives. What teachers perceive and practice should be central to any planning for the future of education. The current study aimed to investigate Jordanian teachers' perceptions on adopting and implementing flipped learning model in Jordanian schools and its impact on students' learning, teacher's role, and the perceived challenges.

The findings showed differences between male and female teachers' perceptions on flipped learning. Despite the fact that the percentage of female teachers who had implemented flipped learning was more than male teachers, they might feel overwhelmed by the extra time and efforts needed for adopting new initiatives added to responsibilities and commandments they already have at home. In addition, the findings pointed to the fact that social factors, including parents, should be considered in implementing initiatives like flipped learning model, because they can influence its implementation. So, they must be onboard with teachers and students.

Based on the findings, it is recommended that more research is needed to capture teachers' voices regarding similar educational issues. In addition, it is recommended to conduct further qualitative studies on flipped learning implementation in order to have a closer look into its implementation. In addition, supporting and encouraging teachers who are willing to take risks and try new paths to their practices can open new possibilities for education.

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