

Evaluation of Bloom's taxonomy and digitalization of English Foreign Language course content

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Abstract

The present research is action research that aims at unveiling the impetus behind Bloom's taxonomy when designing the online courses' educational objectives in the digitized courses and checking its benefits on learners' academic achievement. To gain empirical data, a survey was addressed to a sample of 62 teachers at the Department of English, Faculty of Foreign Languages. The survey consisted of an online questionnaire that attempts to collect teachers' viewpoints, perceptions, and experiences about the use of Bloom's taxonomy when formulating courses' objectives during online learning and its impact on learners' achievement. The obtained results were coded, treated, and analyzed through the Statistical Package of Social Sciences SPSS. The findings of this paper revealed that the creation of effective objectives depending on Bloom's taxonomy facilitates and highly improves learners' academic achievement and serves as a guide in their new online learning setting.

Keywords: Academic achievement; Bloom taxonomy; courses' content; COVID-19 pandemic; Online teaching.

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1. Introduction

The year 2020 was highly manifested as a year of the recent global pandemic due to the SARS-CoV-2 virus, which causes COVID-19 disease. A recent estimation by UNESCO (2020) denotes that a great proportion of worldwide enrolled learners (91.3%) were obliged to pursue online learning to preserve their lives and promote the continuity of their learning. In the Algerian context, educational institutions and schools closed their doors starting on 12th March 2020, and universities and higher institutions were no exceptions. The shift from face-to-face learning towards online Learning was marked by an apparent difficulty and perplexity in both teaching and assessing learners all over the globe and at all educational levels (Smith, 2021; Mouw et al., 2023; Zhang, Zhang & Zhang, 2023).

Hodges, Moore, Lockee, Trust, and Bond (2020) affirmed that this unexpected shift did not adhere to the norms and standards of online learning and thus did not fully attain its predetermined goals and objectives. For instance, the substitution of face-to-face courses for online ones, using synchronous and asynchronous instructions and feedback, videoconferencing, and MP4 contents are not what online could fully represent, and encompass.

Indeed, digitizing course content requires rethinking, redesigning, and reconsidering the learning experience from different angles (Lee, 2019; Yu-Ju, 2019; Moghadam, Narafshan & Tajadini, 2023). This need compels teachers to think highly of the appropriate assessment of learners as well as the course content and its objectives (Friedman, Blau, & Eshet-Alkalai, 2016; Elkhatat, 2022). Many researchers argue that instructional objectives not only assist teachers to achieve course goals but also help students to reach more advanced cognitive level development. In the same spectrum, teaching is regarded as an intentional act that necessitates the settlement of well-established objectives.

On the other hand, Bloom's taxonomy is a tool that teachers can easily adopt in the creation of clear, specific, and measurable course objectives. At the beginning of its appearance and before its recent revision, this taxonomy was based on the fact that learning depends on three main pillars: cognitive, psychomotor, and affective domains. In this respect, learning encompasses knowledge, skills, and attitudes. Ultimately, Bloom's taxonomy was revised to facilitate teachers in the formulation of the course's objectives, and the construction of the appropriate assessment that fits best (Krathwohl, 2002; Larsen et al., 2022).

The Algerian experience is new regarding the online learning application. The sudden adoption of this type of learning during the pandemic stimulated various challenges for both teachers and learners. Besides, the predetermination of the online educational goals is supposed to help both sides to enjoy online learning and reach what is expected. The creation of online educational objectives can adhere to many models. Bloom's taxonomy is one of the models that would assist teachers in easily and effectively setting the course objectives. Based on the fact that the probable results of investigating the application of this model among Algerian university teachers will highlight and generate many possible and practical practices. In this regard, the current research paper aims to explore the interrelationship between Bloom's taxonomy, and the settlement of both the learning goal and objectives of the courses.

This situation compels the raising of the following research question: To what extent does Bloom's taxonomy impact the design of an online course goal and objectives?

To answer this research, question the following research hypothesis is set: Bloom's taxonomy positively impacts and facilitates the design of appropriate educational goals and objectives of

courses. This study is limited to English teachers who belong to the faculty of foreign language and used online learning after the sudden adoption of online learning viewing the COVID-19 pandemic.

1.1. Literature Review

1.1.1. Shift towards the Online Learning

Online learning offers several opportunities for learners and assists them to overcome various hindrances. However, this type of learning requires more time and effort from teachers to create an appropriate online course. Also, remote learning compels teachers to possess certain skills' mastery namely ICTs skills. Furthermore, the online learning context challenges teachers to raise learners' engagement and motivation to learn. All this requires teachers to redesign the traditional learning experience, particularly during the current COVID-19 pandemic.

1.1.2. Some Benefits of Shifting towards Online Learning

Research in the educational field proves the efficacy of online learning. This type of learning offers learners a range of opportunities that positively influences the quality of their learning as it emphasizes learners-centeredness. For instance, Suresh, Priya, and Gayathri (2018) found that online learning permits learners to have control over the time, place, and content they wish to learn. This flexibility of learning, content, and adaption according to learners' educational needs and objectives, was highly stressed in Dhawan's (2020) findings. For this researcher, the flexibility of learning improves learners' understanding and academic achievement. Another benefit of online learning is the possibility of delivering a course to a massive audience compared to the face-to-face learning context. Suresh, Priya, and Gayathri (2018) reported that online learning platforms enable a large number of learners to have access to the same content and even interact. Also, the same researchers maintain that both asynchronous and synchronous learning provides more chances and enhances the communication and interactions between learners and their teachers and with their peers. These interactions afford learners constructive feedback that ameliorates the quality of their learning and even its process. Cantoni, Cellario, and Porta (2004) pointed out that online learning facilitates learning as it does not necessitate traveling for many learners. In this context, learners will save time, money, and physical effort. Most importantly, this type of learning encourages learners' centeredness as learners are more involved and active in the learning experience.

1.1.3. Some Challenges Met During the Application of Online Learning

Online learning has many identified downsides. Yusuf and Al-Banawi (2013) noted that among the observed challenges that teachers may face during this type of learning is learners' lack or decrease of motivation to learn. Learners may become distracted, lose focus, or miss important deadlines. This is very common as most classes were based on teacher-centeredness. Claudiu, Laurentiu, Mesesan-Schmitz, Stanciu, and Bularca (2020) related this lack of motivation to several factors such as the absence of physical interaction, the newness of this learning type, teachers' limited knowledge of online teaching strategies, and importantly the sudden, and unprepared shift toward the entirely online learning. Also, Sadeghi (2019) asserted that many students suffer from internet-related problems and the lack of computers. Aboagye, Yawson, and Appiah (2020) pinpointed that accessibility, connectivity, lack of digital devices, and lack of communication and interaction with teachers and other peers are the main hindrances that learners face during online learning.

1.1.4. Learning Objectives

The development of educational goals and objectives is not considered a recent phenomenon in the teaching-learning field. Indeed, Harris et. Al (1995) traced back objectives and aims' origin to World War II when military training depended on structural training that encompassed both notions. The learning objectives serve to create a short framework of subjects and courses. They assist teachers to determine the scope of the courses, and learners to know what is expected from them.

The courses' objectives align with the course goal, serve to prioritize the curriculum components and create suitable assessments (Biggs, 1996). The same researcher held that this alignment should be respected in both face-to-face and online learning. Also, courses' objectives are considered learner-oriented. Grant (2007) stressed the importance of informing learners about the educational goal and objectives of the courses. He added that informing them, in advance, will reflect positively on their learning. In this respect, learners will be well prepared to treat and use the upcoming knowledge and know what is exactly expected of them to do and achieve. The educational objectives are created depending on several models and stated in terms of the learner's behavior at the end of instructions or courses. In this respect, many teachers prefer to adopt one of the practical models such as Bloom's taxonomy (1956).

1.1.5. Bloom's Taxonomy

Bloom, Engelhart, Furst, Hill, and Krathwohl's taxonomy (1956) is one of the models that highly influenced educational researchers. Since its inception, the model, curricular development, and the construction of tests in education and professional organizations and institutions (Kunen, Cohen, & Selmon, 1981). This taxonomy represents a clear model that classified six main operations in the cognitive domain. It outlines skills that are categorized from simple to complex and from concrete to abstract. Adams (2015) held that this classification is maintained from the identification of the lower-order skill that involves less cognitive processing to higher skills that need profound cognitive processing. Importantly, the six levels are considered to be cumulative with each level of the system building on the successful completion of the prior and preceding levels. In this respect, Bloom's hierarchical taxonomy is composed of the following: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation.

This taxonomy is one of the conventional models of cognitive abilities and educational objectives used in education at all levels (Kottke & Schuster, 1990). The same researchers hold that Bloom's classification has a great and critical impact on the understanding and the structure of learning outcomes. Bloom's taxonomy was revised in 2001 by researchers. Krathwohl (2002) stated that this revision entailed knowledge and cognitive processes.

Bloom's main categories consisted of:

The Structure of the Cognitive Process Dimension of the Revised Taxonomy is defined as follows:

- Remember: Retrieving relevant knowledge from long-term memory
- a) Recognizing (or identifying)
- b) Recalling (or retrieving)
- Understand: Determining the meaning of instructional messages, including oral, written, and graphic communication

- a) Interpreting (or clarifying, paraphrasing, representing, translating)
- b) Exemplifying (or illustrating, instantiating)
- c) Classifying (or categorizing, subsuming)
- d) Summarizing (or abstracting, generalizing)
- e) Inferring (or concluding, extrapolating, interpolating, predicting)
- f) Comparing (or contrasting, mapping, matching)
- g) Explaining (or Constructing models)
 - Apply: Carrying out or using a procedure in a situation
- a) Executing (or carrying out)
- b) Implementing (or using)
 - Analyze: Breaking material into its constituent parts and detecting how the parts relate to one another and an overall structure or purpose
- a) Differentiating (or discriminating, distinguishing, focusing, selecting)
- b) Organizing (or Finding coherence, integrating, outlining, parsing, structuring)
- c) Attributing (or Deconstructing)
 - Evaluate: Making judgments based on criteria and standards
- a) Checking (or coordinating, detecting, monitoring, testing)
- b) Critiquing (or Judging)
 - Create: Putting elements together to form a novel, coherent whole or make an original product
- a) Generating (or hypothesizing)
- b) Planning (or designing)
- c) Producing (or constructing) (Sobral, 2021, p. 149).

1.1.6. Revision of Bloom's Taxonomy

This model was revised by Anderson, and Krathwohl (2001). These researchers added three main changes which were the results of the revision of the cognitive domain with a new approach. Precisely, the researchers first rearrange and change the categories and their names from noun to verb forms. Second, they created a process and a level of knowledge matrix.

1.1.7. Assessment and Learning Objectives

Designing Courses' objectives relying on one of the common tools facilitates the tasks of both teachers and learners and enhances the quality of learning. Also, creating the objectives enable teachers to design the appropriate assessment and test the extent of the measurability of the courses' objectives. Courses' objectives are formulated by indicating hierarchically what is expected from learners to perform at the end of the course. Consequently, the assessments should relate to the objectives. Harden (2002) maintained that to obtain effective learning, teachers need to consider and

align three main phases. First, teachers need to define clear course objectives. Second, teachers develop courses' content and effective learning strategies to attain the courses' objectives. Third, creating an assessment that matches with courses' objectives.

2. Materials and Methods

2.1. Participants

To gain empirical data, an online survey was conducted on 62 teachers that represent the whole population. All teachers were selected as their number is manageable. The teachers belong to the faculty of foreign languages, at Batna-2 University, Algeria. The study targeted the Department of English as teachers in this field are pre-exposed to Bloom's taxonomy when they were studying.

2.2. Data collection instrument

This study is qualitative research. It opts for a survey to collect and analyze the needed data. The survey consists of an online questionnaire that attempts to collect teachers' viewpoints, perceptions, and experiences about the use of Bloom's taxonomy during online learning and its impact on designing appropriate online course objectives to assist other teachers in their future course creations. Consent was sought from all the participants and as such, they participated voluntarily.

The questionnaire survey consists of three main sections. The first section deals with general information about the participants, and their teaching backgrounds. The second section broadly unveils teachers' perceptions about the efficacy of designing appropriate course objectives. Ultimately, the third section discusses teachers' knowledge of Bloom's taxonomy and its impact on the online course's objectives' design and learning process in general.

2.3. Analysis

To check the survey's validity and reliability, the questionnaire was piloted with other teachers to comment on and suggest any possible modifications. In this respect, the survey was assigned to 25 teachers who did not belong to the preselected sample of this study to check the validity of the questions and to provide us with constructive suggestions and possible modifications. Also, the obtained answers were coded, treated, and analyzed depending on the Statistical Package of Social Sciences SPSS to check the reliability of the survey. The analysis of the internal consistency of the questionnaire was based on comparing the obtained results with Cronbach's Alpha (CA) value (0-1.0). All questions that recorded low CA values i.e., lower than 0.6 are either modified or deleted.

3. Results

The obtained results from the questionnaire indicate the following.

- Section One: Teachers' General Information and Teaching Background.

This section seeks to unveil teachers' background information. It encompasses five items.

Item One: Teacher Primary Position.

Item Two: Teachers' Teaching Experience.

These items were included to reveal professional information about teachers such as their experience in teaching and their academic degrees. The obtained results are tabulated in Tables 1 and 2.

Table 1

Teachers' academic qualification

Participants	Professor	Associate Professor A	Associate Professor B	Senior Lectures A and B	Part-time Teachers
Participants (number)	02	05	11	29	15
Participants (Frequency)	3.23%	8.06%	17.74	46.77%	24.20%
Mode =4					

Table 2

Teachers' teaching experience

Teaching Experience	Less than 5 Years	05 - 10 years	10 - 15 years	20 -25 years	More than 30
Number of Participants	05	09	43	03	02
Frequency	8.06%	14.52%	69.35%	4.84%	3.23%
Mode = 3					

The obtained results prove that a considerable number of respondents (46.77%) are Senior Lecturers A and B as the mode of this question results in 4, 11 teachers being Associate Professor B and only five of them are Associate Professor A. Two teachers are professors and a number of them are part-time teachers (24.20%).

On the other hand, the majority of teachers have significant teaching experience. In this respect, the mode of this question indicates that the lion's share of respondents has between 10-15 years of experience (69.35%). Nine teachers indicate that they teach between five and ten years. Five teachers have more than 20 years of experience: three of them selected the 20-25 category and two teachers taught for more than 30 years. Only five teachers have less than five years of teaching experience.

Item Three: Did you use online teaching before the COVID-19 PANDEMIC? How?

This item was integrated to reveal teachers' novelty in teaching online. The reported answers of the respondents are represented in Table 3.

Table 3

Teachers' use of online learning before the COVID-19 pandemic

Participants	Yes	No
Number	11	51
Frequency	17.74%	82.26%
Mode=2	5	6

The majority of the respondents reported that they did not depend on online learning before the current pandemic. The minority of teachers (17.74%) who mention the use of online learning reveals that this use was a supportive tool rather than blending learning. This measure was taken by them to assist learners to have more practice in some subjects.

Item Four: Do you believe that online learning is beneficial for your learners? Justify your answer.

This question was integrated to collect information about teachers' perceptions of the possible benefits that could be offered to students when using online learning. The results are summarized in Table 4.

Table 4

Benefits of using online learning according to teachers

Benefit	Frequency	Number
Overcoming some psychological problems	99.77%	60
Flexibility in Learning	99.77%	60
More time to practice	98,39%	61
Improving the Four skills	61,29%	38
Improving their use of educational platforms	40.32%	25
Encouraging autonomous learning	61.29%	38
More time to interact with learners and learners with their peers	90.32%	56
Overcoming some psychological problems	90.32%	60

Teachers note that online learning provides a fertile platform that encourages the development of learning quality. For them, the tabulated benefits can be gained when using online learning appropriately from both sides, teachers, and learners.

Item Five: Name two main challenges/downsides of online learning.

This item attempts to highlight the most common impediments that meet teachers when applying online learning. The obtained answers could assist future teachers to overcome these hindrances.

Table 5

Major hindrances met by teachers when using the online learning

Hindrances	Frequency	Number
Limited ICTs Mastery	64.52%	40
Re-adjusting the courses' content, objectives, assessments	79.03%	49
Learners' lack of motivation	95.16%	59
Learners' lack of engagement	98.39%	61
Internet-related problems	96.77%	60
Lack of electronic devices among students	95.16%	59

As is clarified in Table 5, almost all teachers (98.39%) note that the main obstacle met is the lack of learners' engagement and motivation (95.16%), particularly in the early phase of online adoption. Besides, teachers assert that internet-related problems (96.77%) and the deficit of electronic devices among the majority of learners (95.16%) harden their tasks. Additionally, teachers declare that the lack of ICT mastery and how to use the educational platform effectively was a factor that made the application of online learning an exhausting educational experience.

•Section Two: The Importance of Designing Courses' Educational Objectives

This section compiles the needed data about the teachers' perceptions and viewpoints about the courses' educational objectives. It encompasses four items.

Item One. According to your experience, creating courses' educational objectives is important in selecting the appropriate: content, assessment, or other?

This item was included to disclose teachers' perceptions about the importance of designing the educational objectives of courses and to unveil their use of it in the real context.

Table 6

Importance of educational courses' objectives

Participants	Courses' content	Courses' learning strategies	Assessment	Other
Number	62	56	59	8
Frequency	100%	90.32%	95.16%	12.90 %
Mode=1				

The results in Table 6 pinpoint that all teachers believe that designing educational objectives assists them in selecting the courses' content. Additionally, the preponderance of teachers (95.16%) points out that assessment is facilitated when you have predetermined educational objectives. Designing educational goals for teachers (90.32%) helps them to select and suggest to learners the appropriate learning strategies. Some teachers (12.90 %) account for the significance of the educational goals in choosing the appropriate online teaching material. They continue that the educational goal and objectives served as a map to guide them when they shifted toward online learning particularly because this shift was sudden and unprepared for the majority.

Item Two. How often do you respect creating courses' educational objectives when you design your course?

Item Three. Do you inform your learners about the courses' educational objectives? justify.

These items were added to receive the needed information about the extent to which teachers respect the creation of educational objectives and inform their learners about them. The obtained results are displayed in Tables 7 and 8.

Table 7

Teachers' frequency of creating course s' educational objectives

Participant	Never	Not Regularly	Regularly	Almost Always
Number	00	15	24	23
Frequency	00%	24.19 %	38.71%	37.10 %
Mode=3				

Table 8

Teachers frequently inform learners about the educational objectives

Participants	Never	Not Regularly	Regularly	Almost Always
Number	04	09	23	26
Frequency	6.45%	14.52 %	37.10%	41.93 %
Mode=4				

The results in Table 7 demonstrate that the majority of teachers respect creating the educational courses' objectives. The mode of this question, which results in three, indicates that a significant proportion (38.71%) 'regularly' do this and some teachers (37.10 %) 'almost always' create educational objectives for their courses. A minority of respondents (24.19 %) 'not regularly' respect this and one of the teachers ignores this step. Teachers hold that designing courses' objectives organize tasks for both teachers and learners in face-to-face and online learning.

The mode of the third answer was four which determines that the majority of the respondents (41.93 %) inform their learners about the courses' objectives and select the 'almost always' category. While 23 teachers inform 'regularly' their students about the courses' objectives. Nine teachers hold that they inform their learners 'not regularly' and only four teachers 'never' inform their learners. It is

worth mentioning that those teachers relied on their answers on the nature of the subject they taught.

Item Four. Do you rely on a particular model/tool when you design the courses' educational objectives? Name it/ them.

This item assists us to know about the tools teachers use when they design their courses' objectives. The obtained results show that the majority of teachers (70%) do not rely on a particular model. The rest of the teachers (30%) named two models that are: Bloom's taxonomy and Kern's method (2009).

- Section Three: Bloom's Taxonomy and its Impact on Courses' Objectives, Courses' Design, and Assessment.

This section entails questions that indicate teachers' perceptions, use, and recommendations about using Bloom's taxonomy when they design educational objectives. The five questions of this section were provided after displaying a brief definition of Bloom's taxonomy.

Item One. How important is it for you to use this taxonomy in designing your courses' objectives in face-to-face teaching? Justify

Item Two. How important is it for you to use this taxonomy in designing your courses' objectives in online teaching? Justify

These items were enclosed as they afford answers about teachers' exploitation of Bloom's taxonomy in both face-to-face and online learning contexts. Also, the comparison of the results of these two items could enable us to figure out if teachers use the same courses' instructions and content and if they attempt to digitize the courses' contents. The obtained results are represented in Tables 9 and 10.

Table 9
Teachers' use of Bloom's taxonomy in face-to-face learning

Participants	I don't know this taxonomy	Not at all essential	Marginally important	Pretty Important	Important
Number	34	01	02	19	06
Frequency	54.84 %	1.61 %	3.22%	30.64 %	9.68%
Mode=1					

Table 10
Teachers' Use of Bloom's Taxonomy in online learning

Participants	I don't know this taxonomy	Not at all essential	Marginally important	Pretty Important	Important
Number	34	01	02	13	12
Frequency	54.84 %	1.61 %	3.22%	20.97 %	19.35%
Mode=1					

The mode of the results shown in Tables 9 and 10 indicates that the lion's share of teachers (54.84 %) does not know this taxonomy. Also, only one teacher believes that this taxonomy is 'not at all essential' while two teachers consider it as 'marginally important'. What is interesting is that the number of teachers who selected 'important' in online learning is doubled compared to the number of teachers in the same category in face-to-face learning. Additionally, the number of teachers who

selected 'pretty important' is 19 while the number of teachers in this category decreased in online learning and was estimated to be 13. This denotes those six teachers changed their perceptions about the use of Bloom's taxonomy and attributes more importance to using this tool in online learning rather than face-to-face learning.

Item Three. How skilled are you in using this taxonomy (In face-to-face teaching)?

Item Four. How skilled are you in using this taxonomy (In Online teaching)?

These two items are integrated to examine how accustomed are teachers to the use of Bloom's Taxonomy.

Table 11
Bloom's usability among teachers

Participant	Not familiar	Not yet	Still developing	Established
Number (in-person learning)	34	01	14	13
Frequency (in-person learning)	54.84 %	1.61 %	22.58%	20.97 %
Mode=1				
Number (online learning)	34	01	14	13
Frequency (online learning)	54.84 %	1.61 %	22.58%	20.97 %
Mode=1				

Broadly, the results of this question indicated that the majority of teachers who previously selected "do not know this taxonomy" selected "not familiar" in addition to the teachers who reported that this taxonomy "is not important" selected 'not yet'. 14 teachers denote that they still develop the use of this taxonomy while 13 of them say that they know how to use this taxonomy appropriately.

Item Five. According to your experience, Bloom's taxonomy is assisting you in designing the Courses' educational objectives and the appropriate: assessment, learning strategies, and other?

This item was integrated to identify in what element this taxonomy was helpful. The answers of respondents indicate that this taxonomy helped in designing the educational objectives (80%) and in deciding about the courses' content (73%). Also, a considerable number of respondents (45%) acknowledge the importance of this model in classifying performances and achievement into cognitive levels. Twenty-nine of the Teachers hold that Bloom's taxonomy assisted them in selecting and readjusting the learning strategies and even the activities.

4. Discussion

Results obtained from item one in addition to item two unveil that a variety of teachers' teaching experiences in addition to their different academic statuses exist. This could be considered as a source of obtaining findings that could be practical and cover all teaching aspects from different angles and viewpoints. Also, the teaching experience of the respondents supports us to generate recommendations based on the different real educational situations met by the teachers.

The answers to item three reveal that almost all teachers are a novice in using online learning. Therefore, teachers' shift toward online learning due to the recent pandemic is regarded as a sudden adoption. Teachers who used online learning before the COVID-19 pandemic noted the importance of this type of learning particularly in assisting learners to learn better. These findings are compatible with Suresh et al. (2018), and Dhawan's (2020), Holloway and Foley's (2018) findings on the efficacy of

this type of learning. This compels teachers to highly consider the benefits that could be gained from online learning.

Item four results consolidate the finding that posits that online learning assists students to overcome many difficulties in learning and enhances the learning process. Teachers assert that this online learning affords learners the flexibility of learning as it allows them to select what, when, and how to study. These findings were mentioned in Suresh et al's (2018) and Dhawan's (2020) works. Similar to Suresh, et al. (2018), teachers claim that online learning supplies learners with more opportunities to practice and discuss the courses' content. Also, they maintain that this type of learning encourages learners to receive teachers' and peers' feedback and improve many skills through constant virtual interactions. Additionally, teachers note that many learners suffer from traveling and the efforts made to reach the universities and assist courses. Nevertheless, learners' learning conditions are to some extent improved due to online learning. These findings are congruent with what Cantoni et al. (2004) report about the flexibility of learning that can be gained from applying online learning. However, teachers insist on the fact that the sudden shift toward online learning did not obey all its norms and standards. Therefore, the attainment of educational goals and objectives was fully reached. This finding is consolidated with Hodges et al. 's (2020) research results.

The results of item five demonstrate that the sudden adoption of online learning creates many downsides. Primarily, teachers report that they found online learning difficult viewing their limited ICT mastery. Online learning requires the possession of a certain ICTs knowledge as mentioned in Holloway and Foley's (2018) research. Teachers hold an apparent need to re-adjust the content of the courses to fit this new educational experience. They add that this re-arrangement of the course's content requires more time and effort from them. The obtained results match with Friedman et al.'s (2016) results which insist on the need to consider the digitization of the online courses' content, objectives, and even assessments.

Also, teachers' answers to this item confirm Holloway and Foley's (2018), Yusuf et al's (2013), and Claudiu et al's (2020) findings as they affirm that learners' motivation and engagement in integrating into the virtual classes was very low and the task of motivating them was very challenging if the surrounding health conditions are considered. Additionally, the internet-related problems and lack of electronic devices were highly emphasized by teachers. This latter was noted in both Sadeghi's (2019), Aboagye et al.'s (2020) research.

The results obtained from items one and two from the second section indicate that teachers acknowledge the prominence of designing the educational objectives in the learning process. Teachers argue that the predetermined educational goals highly assist them in selecting the courses' content, suggesting to learners the appropriate learning strategies, and creating the corresponding assessment. These results emphasize Biggs's (1996) finding of the vital alignment of educational objectives, assessment, and course content. Results of teachers' frequency of predetermining the educational goals recorded in item two consolidate their answers obtained in item one, particularly that none of the teachers neglected the creation of the objectives. These results strengthen findings that accentuate the importance of designing educational objectives and their alignment with the course content and assessment. Teachers' answers in the following item prove that they inform their learners about the educational objectives of courses. Teachers consider that this step is mandatory to motivate learners and leave them on the exact track of the course. These results are similar to Grant's (2007) results which recommend informing learners about the educational goal and objectives to make the learning experience more effective.

As Kottke and Schuster (1990) maintained, the obtained results in the last item of the second section demonstrate that some teachers prefer to organize their courses' preparation, particularly in designing the educational objectives phase, the reason why they rely on some tools such as Bloom's taxonomy.

The third section's first four items reveal that the majority of teachers do not know Bloom's taxonomy and thus do not use it. The teachers' perceptions about the use of taxonomy among the rest of the teachers who know this taxonomy vary. However, what was remarkable is the fact that teachers prefer to use this taxonomy in online learning more than in the face-to-face learning context. Teachers connect the importance of using this taxonomy to several factors such as guiding their students and highlighting what is expected from them, particularly to the sudden shift towards online learning. The respondents' usability of this taxonomy differs. However, 27 of them show great success in using it. Also, teachers' answers denote that this taxonomy facilitated for them the assessment of learners as it selects exactly what should be measured at the end of courses and these results uphold Anderson, and Krathwohl (2001) in addition to Krathwohl' (2002) findings. Also, teachers assume that Bloom's taxonomy greatly assists them to adjust the content of online courses to fit the new educational experience. Additionally, they add that this taxonomy serves in selecting the appropriate instructional activities. Teachers add that the designed courses' objectives following this taxonomy were organized. Consequently, learners were enlightened about what they are supposed to perform and do especially in the early phase of online learning as they served as a guiding map for them. Finally, teachers hold that this model helps them in classifying learners' performances and achievements into cognitive levels. All these results fall in the same spectrum as Anderson et al.'s (2001) and Krathwohl's (2002) findings which stress the significance of this taxonomy in organizing the learning process. This organization is effective even in online learning contexts.

5. Conclusion

Ultimately, the collected results and obtained findings compel us to answer the research question that states: to what extent does Bloom's taxonomy impact the design of online courses' goals and objectives? Consequently, the results and findings confirm the formulated hypothesis:

Bloom's taxonomy highly impacts, facilitates, structures, and organizes the design of appropriate educational goals and objectives of courses. Additionally, teachers authenticate this taxonomy as it proves its adequacy in selecting assessments' content, learning strategies, and instructional activities. Moreover, this taxonomy assists in digitizing the courses and serves as a leading map for both teachers and learners in the early phases of adopting online learning as it organizes the learning experience. In conclusion, the current research maintains that by carefully planning the structure of the educational objectives and depending on distinctive models such as Bloom's taxonomy, teachers can improve the quality of students' online learning.

6. Recommendations

The survey assists in a complying set of recommendations that could be practical for future researchers and teachers:

- Considering the possibility of digitization of courses' content using Bloom's taxonomy.
- Depending on Bloom's taxonomy classify learners' performances into cognitive levels.
- Using this taxonomy to ensure that the educational objectives are measurable.
- Depending on this taxonomy construct solid course profiles.

- Notifying learners about the learning objectives to orient them during both face-to-face learning and online learning.

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