




Education 3.0 underpinned with the heutagogical approach for a smooth shift to distance learning in higher education

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ABSTRACT

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As the shift to distance learning was abrupt due to the COVID-19 pandemic, neither university students nor instructors were fully prepared. There was a real demand, therefore, for adopting principles that belong to Education 3.0 in higher education institutions as this pandemic might not be the last. This study aimed at evaluating to what extent the principles of Education 3.0 based on the heutagogical approach could be applied at universities. To achieve this target, a mixed approach was followed by utilizing two instruments; a questionnaire and semi-structured interviews. A total of (200) students and (10) instructors from Birzeit University (BZU) were the participants. Data that emerged from the questionnaire were statistically analyzed, whereas the interviewees' responses were qualitatively content-analyzed and grouped into main themes. The findings revealed that some principles of Education 3.0 have not been fully applied yet at BZU, such as supporting the learners' self-determination; the individualization of teaching methods and strategies; blending synchronous online teaching mode with the face-to-face; empowering and coaching students to build personal learning environments with using multiple tools of authentic and real-life evaluations. Accordingly, it was recommended that universities worldwide as well as other higher education institutions should adopt the principles of Education 3.0 to make the shift to distance learning smooth for both students and instructors, especially by using flexible curricula and open learning resources; empowering students to determine their needs, objectives and personal learning environments; individualizing the teaching methods; and avoiding "One-size fits all" strategies.

Contribution/Originality: This paper can be regarded as the first in suggesting a new trend of teaching (Education 3.0), i.e., heutagogical approach to be adopted by academics and decision-makers in higher education. Its novelty has sprung from the principles of Education 3.0 that can potentially make a breakthrough in teaching, especially by blending online teaching as the main component in teaching adults, which can make the shift to remote teaching smooth particularly in crises.

1. INTRODUCTION

One of the main targets of education nowadays is preparing learners who are capable to cope with the demands of the ever-changing era and who are equipped with the skills and competencies needed to be lifelong learners (International Labour Organization, 2021; Kuit & Fell, 2010; Martinez, 2022; Mawas & Muntean, 2018; Wilk & Romanowska, 2016). Thus, teachers across different disciplines are demanded to integrate the 21st-century skills

and essentials in their teaching practices through adopting a radical orientation that responds to bringing up a generation of learners who are thinking critically, interacting effectively as well as reasoning and solving life and personal problems, particularly during crises such as the COVID-19 pandemic, with being fully engaged and able to cope with the information technologies that have become dominant worldwide (Kim, Raza, & Seidman, 2019; McBride et al., 2020; Palmer, 2015; Reimers & Chung, 2019). The adjustment to the complexity of societies and the international changes, therefore, compels teachers and educators to devise new methods and techniques that guide learners towards being self-dependent and self-determined with acquainting global mindsets (Martinez, 2022).

The holistic development of learners across stages has also become one of the premises of most educational programs that requires merging the trends of teaching with the global knowledge economy (Pařízek, 2021; Sana & Ahikary, 2017). This can be achieved through acknowledging the learners' needs and readiness as a priority at each developmental stage they pass through while pursuing their education. There are three trends of teaching methods that move in parallel with the characteristics of learners at each stage, which were defined as pedagogy, andragogy and heutagogy (Akyildiz, 2019; Blaschke, 2012; Halupa, 2015). On one hand, the main features of pedagogy were connected with teaching young learners with meeting their special characteristics through embracing certain instructional techniques and methods which meet their attributes (Husbands & Pearce, 2012). Learners at a young age, for example, are usually dependent and attached to their teacher. They are also driven by external sources of motivation by relying on the learning resources and productive environments assigned and provided to them as well (Johnson, 2017). Hence, the process of the pedagogical learning approach tends to be teacher-led and subject-centered, and it is mainly delivered based on a prescribed curriculum and according to assigned materials designed by educators who assume an active role in the pedagogical context. Andragogy, on the other hand, can be defined as a learning approach related to teaching adult students by granting them some independence over their learning (Blaschke, 2012; Blaschke & Hase, 2019; Naqvi & Parvez, 2019). Within such an approach, learners can be guided by intrinsic motivation and personal goals. Adult students start usually relying on their personal experience in their learning; thus, the teachers can be facilitators of learning more than the source and architect of the learning materials (Blaschke, 2012; Halupa, 2015).

In respect of the heutagogy approach, it was referred to the learners' self-learning management regardless of being young learners or adults. It was first introduced in 2001 as a response to the demanded skills of the 21st century (Akyildiz, 2019; Blaschke, 2012). Learners in this approach are anticipated to acquire certain attributes as self-determined students, who are self-regulated, self-motivated and who have thinking approaches and personal values. Within this approach, learners also tend to be independent and capable as they can select their learning strategies and materials with developing critical and problem-solving skills. In addition to that, they tend to be driven by self-efficacy which means they can set their own goals and manage their learning creatively (Akyildiz, 2019; Blaschke, Bozkurt, & Cormier, 2021; Bozkurt & Hilbelink, 2019).

Teachers' main role in heutagogy approach was specified to be a guide-to-the-side, especially when they expose their students to multiple suggestions and options to select from what suits them without imposing. Thus, teachers based on the heutagogical premises should enhance learners' capability to cope with novel situations and solve recent problems. Heutagogy also involves self-directedness as well as self-regulation, and this can empower learners to design their personal learning environments (PLE). To achieve self-determination among learners, Patel (2019) stated that teachers should individualize their teaching methods by offering guidance as well as providing feedback and resources to support their students. In brief, heutagogy was linked with empowering students to decide what to learn and how to learn based on personal and various learning resources, such as in distance and online learning environments, which blend technology as an inseparable component (Blaschke et al., 2021; Halupa, 2015).

The technological evolution and the storm of the Web, Internet and social media resulted in revolutionary perspectives that set more demands on the educational systems to adjust to Educational Technology (2017).

Worldwide, the movement in technology from Web 1.0 to Web 2.0 and towards Web 3.0 had its influence on the evolution of education that created a new categorization known metaphorically as Education 1.0, Education 2.0 and Education 3.0, where technology has merged as an essential component (Gerstein, 2014; Tang & Lim, 2018). The similarity between Education 1.0 and Web 1.0 was held as both are one-way routes. Similar to Web 1.0, learners in Education 1.0 tend to be consumers of knowledge that is delivered by their teachers. Teachers in this model tend also to be the designers of the activities, which are basically confined to fixed learning resources and evaluation tools (Keats & Schmidt, 2007). However, Education 2.0 resembles Web 2.0 as it can allow more interaction with the information by the users. Thus, learners in Education 2.0 are not only capable to access the information, but they can also interact with the content and communicate with their teachers and with a community of learners through multiple mediums of social media. The interaction in Education 2.0 is student-to-teacher as well as student-to-student, so it can involve communication, contribution and collaboration (Gerstein, 2014). It is worth mentioning that the premises of Education 1.0 sprang from the pedagogical approach, whereas Education 2.0 referred to as the andragogy approach (Blaschke, 2012; Narayan & Herrington, 2014).

In terms of Education 3.0, it resembled the waves of Web 3.0 regarding the learners' interaction and personalization of their learning experiences through being empowered to use open learning resources and through selecting relevant topics. Learners in Education 3.0 can be connected with a community of learners and experts outside their educational institutions (Akyildiz, 2019; Gerstein, 2014). They can also have their own personalized and self-determined scope, which tends to be self-based and problem-solving learning. Thus, creativity can be highly enhanced in this mode, since students can be encouraged to create and share knowledge by using social networking sites as one of the main components of their learning process. Education 3.0, hence, can embrace learners' connectivity, creativity and constructivism, while the teachers' role is to guide-to-the-side (Blaschke, 2012). Besides, the physical building of the educational institutions and the textbooks are not the core of the educational systems anymore within Education 3.0, as learners can be granted a control over choosing their learning resources and types of assessment. They can also contact outside peers and experts while shaping their personal learning environments.

Furthermore, Education 3.0 was specified as a model of teaching that is underpinned by the heutagogical approach, which depends on interest-based and problem-solving learning (Akyildiz, 2019; Hase, 2016). The learning experience in this mode tends also to be personalized and self-determined, and learners should be encouraged to be autonomous and capable to self-regulate their learning through setting their objectives and through accessing what suits them from open educational resources independently and creatively (Blaschke, 2012). In addition to that, learners in Education 3.0 model can be regarded as content generators due to the intense use of smart devices, since they can share blogs, videos, songs and drawings by using multiple social-networking applications, such as Facebook, Twitter, YouTube and so forth. Within this constructivist model underpinned by the heutagogical approach, e-learning is highly promoted in Education 3.0 model, and learners can be granted control over their learning resources. They also can have virtual learning spaces as well as local and international communities of peers (Blaschke et al., 2021; Handayani, Yeigh, Jacka, & Peddell, 2021).

According to Agonács and Matos (2019) it was stated that learner agency can be enhanced in online learning environments as such ecologies demand a high level of self-regulation and self-directedness. Online learning also implies having connected societies and enhancing learners' autonomy that supports them to be creative in establishing personal learning environments, where they share, connect and collaborate (Blaschke & Hase, 2015a; Blaschke et al., 2021). Remote education can also acquaint learners with skills and competencies that enable them to learn independently with being driven by intrinsic motivation and engagement (Agonács & Matos, 2019; Saadatmand & Kumpulainen, 2013). Thus, incorporating this model of education can equip students with skills as lifelong and self-directed learners who are self-regulated, especially through engaging them in the learning process when they have a choice in creating relevant and personal learning environments (Kenyon & Hase, 2010). In other

words, distance education is an indivisible component of Education 3.0, and it has a special correspondence to the heutagogical approach that involves developing learners' self-directedness, self-determination and self-regulation (Agonács & Matos, 2019; Bozkurt & Hilbelink, 2019). According to some studies Blaschke, (2012); Narayan and Herrington (2014), there were some principles of Education 3.0 related to the heutagogical approach were discussed. These principles were relevant to the learning materials and curricula; teaching methods and strategies; teachers' roles as well as assessment and feedback. It is worth mentioning that the suggested principles by Narayan and Herrington (2014) as well as Blaschke (2012) were significant in the current investigation as they were adopted as the paradigm of this research effort. Additionally, it was stated that Education 3.0 underpinned with the heutagogical principles might meet university students' characteristics more than other stages (Gerstein, 2014; Tang & Lim, 2018), as this model embraces distance learning that can enhance learners' multiple competencies and skills that are demanded to cope with the essentials of the 21st century and the work market.

Although enhancing the 21st-century skills in higher education may demand adopting a model that implied principles such as the premises of Education 3.0, it was stated that the most dominant form of instruction applied in higher education institutions tend to belong to Education 1.0 and may fight towards Education 2.0 (Gerstein, 2014; Tang & Lim, 2018). This indicates that most of the teaching practices and technology immersion in university instruction are merely teacher-directed and curriculum-based (Bice & Tang, 2022). Besides, it was declared that there has been limited attention from educators and researchers that is given to applying the principles of Education 3.0 in higher education (Blaschke, 2012; Hase, 2016). Thus, the dominant teaching practices in higher education tend to spring from pedagogy and andragogy. According to the previous studies (Blaschke et al., 2021; Patel, 2019), teachers' change-resistance of placing the control of learning into students' hands, changing the curriculum development, varying the instructional methods and blending distance learning as an essential component in teaching were listed among the challenges that hindered the adoption of Education 3.0 model.

Among these challenges and due to the need to embed online learning in the instructional plans at universities, it is essential to revisit the online education practices and methods in higher education (Bozkurt & Hilbelink, 2019), particularly after the Covid-19 pandemic as the shift to the distance learning was abrupt and sudden where neither teachers nor students were well-prepared to this leap. Besides, although multiple studies investigated the adoption of the heutagogical approach and modern technology in higher education (Agonács & Matos, 2019; Canning & Callan, 2010; Carpenter & Linton, 2018; Kapasi & Grekova, 2017), examining the application of the Education 3.0 model based on this approach at universities according to students' and instructors' perspectives has been scarcely researched before. Thus, this research effort can be regarded initiative in terms of discussing a recent trend in education that embrace the principles of heutagogy in a systematic plan which was missing in the previous studies. Therefore, the current study aimed at investigating to what extent the principles of Education 3.0 (underpinned with heutagogy) are applied at one of the universities (Birzeit University: BZU) based on students' and instructors' perspectives.

1.1. Questions of the Study

- (1) To what extent are the principles of Education 3.0 applied at BZU university based on students' perspectives?
- (2) To what extent are the principles of Education 3.0 applied at BZU university based on instructors' perspectives?

2. METHOD

This study aimed at examining to what extent the principles of Education 3.0 are applied at Birzeit University (BZU) in Palestine based on students' and instructors' perspectives. To answer the study's questions, a mixed method approach was followed by collecting data quantitatively and qualitatively (Creswell, 2014).

2.1. Participants

The present study was conducted in the academic year 2021-2022 (Summer session). A total of (200) participating students from different disciplines were selected randomly to respond to a questionnaire regarding Education 3.0 principles applied in the courses that they were enrolled in. Besides, (10) BZU instructors participated in semi-structured interviews.

2.2. Data Collection

The data were obtained quantitatively and qualitatively. Quantitative data were collected by utilizing a students' questionnaire developed by the researcher based on the principles of the heutagogical approach presented by Narayan and Herrington (2014) and Blaschke (2012). The questionnaire consisted of four main domains which were: (a) Learning Resources and Curriculum; (b) Teaching Methods and Strategies; (c) Instructors' Roles (d) Assessment and Feedback. Each domain embraced sub-categories and items for identifying the principles of the educational model applied at BZU. As for obtaining the qualitative data, instructors from BZU were invited to participate in 15-minute semi-structured interviews.

2.3. Instruments Validity and Reliability

To set the validity of the questionnaire, it was given to a jury of experts from the Instruction and Curriculum Faculty at BZU, who provided some suggestions and confirmed its face and content validity. To evaluate the reliability of the questionnaire, the internal consistency (Cronbach approach) and the test-retest approach were followed. Table 1 illustrates the results.

Table 1. Cronbach alpha coefficients and the test-retest coefficient for each domain.

Reading sub-skill	Alpha coefficient	Test-retest coefficient
Learning resources and curriculum	0.77	0.78
Teaching practices	0.78	0.81
Instructors' roles	0.79	0.87
Assessment and feedback	0.85	0.82
Overall	0.87	0.89

The Cronbach Alpha Coefficients for each domain in the questionnaire were extracted. As shown in Table 1, the Cronbach Alpha Coefficients for the Learning Resources and Curriculum, Teaching Practices, Instructors' Roles, and Assessment and Feedback were (.77), (.78), (.79), and (.85) respectively. All these results were above the threshold value (.70) (Cronbach, 1951). Besides, the test-retest coefficients of the same domains were (.78) (.81), (.87), and (.82), respectively. Test-retest reliability coefficients were higher than the threshold value (.70) (Cronbach, 1951), as such the instrument was considered reliable.

2.4. Data Analysis

To answer the study's first question, data that emerged from the questionnaire were analyzed statistically using the Statistical Package for the Social Sciences Program (SPSS version 23). The means, standard deviations, rank and level of agreement of the students' responses were calculated. As for the data generated from the interviews, they were content analyzed using pre-determined categories (Krippendorff, 2018) related to the principles of Education 3.0 based on the four main domains: a) Learning Resources and Curriculum; (b) Teaching Methods and Strategies; (c) Instructors' Roles and (d) Assessment and Feedback. Instructors' responses were analyzed, coded and categorized into themes. Then, the frequencies as well as the percentages of the themes were calculated.

3. RESULTS

3.1. Results Pertinent to the First Question

To answer the first question “To what extent are the principles of Education 3.0 applied at BZU university based on students’ perspectives?”, the means and standard deviations of students’ responses regarding the application of the principles of Education 3.0 model at BZU university were calculated based on the four domains. Table 2 illustrates the means, standard deviations, rank, and level of agreement of students’ responses to the first domain: Learning Resources and Curriculum.

As displayed in Table 2, the mean scores of students’ responses to the Learning Resources and Curriculum domain ranged from (2.15) to (3.05) with medium to high positive perceptions. Students reported the highest perceptions of agreement (Mean=3.05) on Item 2 “The learning objectives are determined in advance by our instructors”, whereas they reported the lowest perceptions of agreement (Mean=2.15) on Items 4 and 5 “During the courses, students are allowed to select relevant learning materials from open resources”; “Students can determine the objectives based on their needs”.

Table 2. Means and standard deviations of students’ perceptions related to the learning resources and curriculum.

No.	Item	Mean	SD	Rank	Level of agreement
2	The learning objectives are determined in advance by our instructors.	3.05	0.23	1	High
6	Students are allowed to manage their style of learning in the courses.	2.99	0.31	2	Medium
3	The learning/ teaching materials are fixed.	2.94	0.37	3	Medium
1	Technology is embedded daily by our instructors.	2.90	0.42	4	Medium
4	Students are allowed to select relevant learning materials from open resources.	2.15	0.45	5	Medium
5	Students can determine the objectives based on their needs.	2.15	0.45	5	Medium
	Total	2.70	0.15		Medium

As for the second domain regarding the Teaching Methods and Strategies, Table 3 illustrates the means, standard deviations, rank and level of agreement of students’ responses.

As shown in Table 3, the mean scores of students’ responses to the Teaching Methods and Strategies domain ranged from (1.97) and (3.07) with low to high perceptions. Students reported the highest perceptions of agreement (Mean=3.07) on Item 2 “The tasks/ activities in the courses are engaging”, whereas they reported the lowest perceptions of agreement (Mean=1.97) on Items 5 and 4 “Online synchronous teaching is often used in the courses”; “Online learning is frequently used in the courses”.

Table 3. Means and standard deviations of students’ perceptions related to the teaching methods and strategies.

No.	Item	Mean	SD	Rank	Level of agreement
2	The tasks/ activities in the courses are engaging.	3.07	0.27	1	High
7	Students can refer to other experts or peers outside the university.	3.00	0.41	2	High
6	Online asynchronous teaching is often used in the courses.	2.83	0.60	3	Medium
1	Learning in the courses is collaborative.	2.17	0.47	4	Medium
3	Questions that are asked in the courses are relevant to students’ interests.	2.06	0.25	5	Medium
5	Online synchronous teaching is often used in the courses.	1.98	0.42	6	Low
4	Online learning is frequently used in the courses.	1.97	0.37	7	Low
	Total	2.44	0.13		

In respect of the third domain “Instructors’ Roles”, Table 4 illustrates the means, standard deviations, rank, and level of agreement of students’ responses.

As demonstrated in Table 4, the mean scores of students’ responses to the Instructors’ Roles domain ranged between (2.16) and (3.02) with medium to a high level of agreement. Students reported the highest level of agreement (Mean=3.02) on Item 9 “Instructors encourage students to produce knowledge creatively”, while they reported the lowest level of agreement on Items 2, 7, 5, 3, 8 and 6 “Instructors offer students multiple open learning resources to select from”; “Instructors support students to use personal learning strategies”; “Instructors focus on the process of learning as well as the product”, “Instructors guide students to set personal learning objectives”; “Instructors involve students in reflective activities to understand how they learn”; “Instructors help students to create personal learning environments”.

Table 4. Means and standard deviations of students’ perceptions related to the instructors’ roles.

Item	Mean	SD	Rank	Level of agreement
Instructors encourage students to produce knowledge creatively.	3.02	0.23	1	High
Instructors scaffold students to think critically.	3.00	0.28	2	High
Instructors vary in their teaching techniques.	2.97	0.29	3	Medium
Instructors scaffold students to build a community of peers.	2.93	0.25	4	Medium
Instructors help students to create personal learning environments.	2.26	0.57	5	Medium
Instructors involve students in reflective activities to understand how they learn.	2.26	0.57	5	Medium
Instructors guide students to set personal learning objectives.	2.21	0.50	7	Medium
Instructors focus on the process of learning as well as the product.	2.20	0.40	8	Medium
Instructors support students to use personal learning strategies.	2.20	0.54	8	Medium
Instructors offer students multiple open learning resources to select from.	2.16	0.37	10	Medium
Total	2.52	0.31		Medium

In terms of the fourth domain “Assessment and Feedback”, Table 5 illustrates the means, standard deviations, rank, and the level of agreement of students’ responses.

Table 5. Means and standard deviations of students’ perceptions related to the assessment and feedback.

No.	Item	Mean	SD	Rank	Level of agreement
8	Writing reflective journals is essential in the courses.	3.04	0.41	1	High
5	Students are exposed to formative assessments (portfolios, projects ...) in the courses.	2.24	0.51	2	Medium
6	Students are usually provided with constructive feedback.	2.18	0.57	3	Medium
4	Students are exposed to various types of assessment.	2.15	0.52	4	Medium
9	Conducting action research is a compulsory part of assessment in the courses.	2.12	0.48	5	Medium
1	The evaluation that students are exposed to during the courses is flexible.	2.10	0.31	6	Medium
2	Students can negotiate the types of the assessment during the courses.	2.10	0.48	6	Medium
3	The evaluation in the courses measures the learning process as well as the product (learning and the grades).	2.05	0.37	8	Medium
7	Students are evaluated in real-life contexts.	1.46	0.86	9	Low
	Total	2.16	0.36		Medium

As shown in Table 5, the mean scores of students' responses related to the Assessment and Feedback domain ranged between (1.46) and (3.04) with a low to high level of agreement. Students reported the highest level of agreement (Mean=3.04) on Item 8 "Writing reflective journals is essential in the courses" whereas, they reported a medium level of agreement on Items 3, 2, 1, 9, 4, 6 and 5. However, the lowest level of agreement (Mean=1.46) was on Item 7 "Students are evaluated in real-life contexts".

3.2. Results Pertinent to the Second Question

To answer the second question "To what extent are the principles of Education 3.0 applied at BZU university based on Instructors' perspectives?", obtained data from the semi-structured interviews were analyzed and categorized based on pre-determined categories related to the principles of Education 3.0. The inducted principles were grouped into four main themes. After the analysis, the frequencies and percentages were calculated and summarized as displayed in Table 6.

Table 6. Frequencies and percentages of the applied principles of Education 3.0 at BZU based on instructors' Perspectives.

Main domain	Education 3.0 inducted principles	Percentages of teachers' responses
Learning resources and curriculum	Using technology frequently.	90%
	Students' use of open learning materials and resources.	60%
	Students' determination of the learning materials, syllabus, objectives ...etc.	20%
Teaching methods and strategies	Collaborative teaching	90%
	Student-centered activities	90%
	Using reflective activities	80%
	Using online asynchronous teaching asynchronous frequently.	80%
	Using online synchronous teaching asynchronous frequently.	20%
	Individualization of teaching (Setting personal objectives, styles, strategies, knowing how to learn)	10%
Instructors' roles	Teaching, demonstration and modeling.	100%
	Facilitating/ scaffolding	80%
	Feedback provision	70%
	Guiding	70%
	Empowering	50%
	Coaching	40%
Assessment and feedback	Summative assessment (Exams, projects)	100%
	Formative assessment (portfolios, quizzes, journals)	80%
	Authentic assessment (real-life/ performance-based)	70%
	Action research	1%

As shown in Table 6, instructors' responses were coded, categorized and grouped into themes regarding the applied principles of Education 3.0 model. As for the instructors' responses related to the learning materials and curriculum, it was inducted that the BZU instructors used technology excessively in the courses they taught, whereas their students fairly used open learning materials. On the other hand, students' determination of their learning objectives and materials received the least rank among the inducted principles. In terms of the teaching methods and strategies, most of the interviewee instructors revealed that they tended to use collaborative and student-centered learning. However, the frequent use of synchronous online teaching and the individualization of their teaching practices received the least codes and frequencies. As for the roles that BZU instructor assume, it was extracted that most teachers confirmed that they taught, demonstrated, modelled and facilitated, yet empowering

and coaching roles were scarcely mentioned. In terms of the assessment and feedback, the instructors agreed that they used various types of assessment, but conducting action research during their courses was not almost listed among the tools of assessment.

4. DISCUSSION

The current study aimed at investigating to what extent the principles of Education 3.0 are applied at BZU university based on students' and instructors' perspectives.

In respect of students' perspectives based on the analysis of their responses to the Learning Materials and Curriculum domain, it can be concluded that although the only item that was ranked high was Item 2 "*The learning objectives are determined in advance by our instructors*", this finding contradicts with the principles of Education 3.0, as the paradigm of this model urges for students' empowerment where they can individualize the objectives in each course according to their needs and interests. This result is consistent with other items, especially Items 4 and 5 "*Students can determine the objectives based on their needs*" and "*During the courses, students are allowed to select relevant learning materials from open resources*" as these items received the least level of agreement. Accordingly, it can be indicated that students at BZU were not fully empowered towards being self-determined learners, who are capable of regulating their learning, determining their objectives and selecting learning materials relevant to their needs.

This result is in harmony with previous studies (Blaschke, 2012; Gerstein, 2014; Patel, 2019) which reveal that determining students' learning objectives, materials and curriculum at some universities tend to be only decided by the instructors, whereas that should be negotiable and flexible. As for students' responses regarding the alignment between the teaching methods and strategies applied at BZU and the principles of Education 3.0, it can also be summarized based on the analysis that the applied teaching activities and tasks tend to be engaging and collaborative, and students can refer to peers and experts outside the university; however, it was demonstrated that remote learning, especially the synchronous online teaching mode, were not adopted frequently with the conventional teaching mode (face-to-face). Thus, blending online learning with the face-to-face teaching mode in all courses was regarded as one of the main principles of Education 3.0, since integrating distance learning in teaching can enable students to manage and regulate their personal learning environments (Blaschke et al., 2021; Bozkurt & Hilbelink, 2019).

Regarding the instructors' roles according to the results displayed previously, it was believed that the instructors tended to be encouraging and supportive for students towards being creative and critical. However, they were not completely empowering and guiding towards building independent personal learning resources and communities, where they can refer to open resources, use personal learning strategies, set personal objectives and consider the process of learning as well as the product. Empowering students and guiding them to understand how they learn were among the main roles of teachers in Education 3.0 that instructors should assume (Blaschke, 2012; Narayan & Herrington, 2014).

This result is consistent with previous studies (Blaschke & Hase, 2019; Patel, 2019) that have presented teachers' change-resistance of placing the control of learning into students' hands as an obstacle towards Education 3.0. As for the fourth domain related to the assessment and feedback, the results demonstrated that students registered that they tend to be involved in reflective writing during the assessment; however, they thought that the evaluation tools that they were exposed to measured only the product without the process. Besides, students believed that they might have not been granted the opportunity to negotiate the types of assessment that suit them during the courses they studied, and they may have not been evaluated in real-life contexts as well. As stated earlier, flexible tools of assessment (i.e., summative, formative and authentic) and feedback provision were listed as core principles of the Education 3.0 model that need to be adopted by teachers (Blaschke, 2012; Narayan & Herrington, 2014).

Regarding instructors' perspectives, the results displayed earlier showed that the BZU instructors tended to integrate technology daily in their courses, and their students were enabled to refer to open learning resources during the courses; however, it was indicated that students may not have been supported to determine their personal objectives during the course, as all interviewee instructors revealed that students tend to be handed course outlines that include the learning objectives and materials for all students (one-size-fits-all). This can reveal that one of the main principles of Education 3.0, which urged coaching and guiding students to determine their personal objectives as well as learning materials (Blaschke, 2012; Narayan & Herrington, 2014; Patel, 2019) was missing.

This conclusion is in harmony with the student's perspectives according to the results emerged from the questionnaire. As for the instructors' teaching methods and strategies in accordance with Education 3.0 principles based on the data analysis of the interviews, it was revealed that the adopted teaching methods were various, collaborative and learner-directed. On the other hand, the use of distance learning, especially the synchronous online teaching mode, was not been embedded with the face-to-face teaching mode yet. Most interviewees (instructors) disclosed that using online learning, especially the synchronous mode of teaching, was excessive and mandatory during the COVID-19 era, but this implementation has not been blended with the conventional mode of teaching yet (face-to-face). They also confirmed that they tended to use the asynchronous online mode of teaching with the conventional methods by contacting students through the students' portal (Ritaj). In other words, although the teaching methods and strategies applied at BZU were confirmed to be collaborative and student-centered, individualization of teaching as well as blending online learning, particularly the synchronous mode, have not been adopted as a systemic policy yet.

These principles have been highlighted in the previous studies (Blaschke, 2012; Blaschke et al., 2021; Bozkurt & Hilbelink, 2019; Narayan & Herrington, 2014) as core principles of Education 3.0 which can be essential to prepare students to be capable and independent learners, who can manage their learning and objectives and can become self-regulated and self-determined. The findings also revealed that the roles the instructors assume with their students were teaching, demonstrating, modeling and facilitating. However, the empowering and coaching roles have been scarcely inducted from the instructors' responses. In terms of the assessment, the instructors tended to use various types of assessment, but conducting action research during the courses has not been applied by most of them yet, which was one of the premises of Education 3.0 (Blaschke, 2012; Narayan & Herrington, 2014).

5. CONCLUSION AND RECOMMENDATIONS

Based on the analytic review of the results regarding the application of Education 3.0 principles at BZU based on students' and instructors' perspectives, some conclusions can be drawn. During the COVID-19 outbreak, the shift to distance learning at most higher education institutions worldwide was hasty and challenging for both students and instructors, and that was due to the lack of skills and preparedness that were needed to cope with the recent situation. Thus, the online teaching methods and strategies applied during the pandemic were mainly confined to traditional methods of teaching. Accordingly, universities as well as other higher education institutions are urged to revisit the teaching practices and to consider the adoption of the principles of Education 3.0 with the conventional methods of teaching to make such a shift to distance learning smooth for both students and instructors.

For instance, using flexible curricula and open learning resources; empowering students to determine their needs, objectives and personal learning environments; individualizing teaching methods with avoiding "one-size fits all" strategies are important principles that can guide students to become self-determined, self-regulated and can manage their learning remotely with receiving guidance and feedback from their instructors. When students are guided to understand how to learn and how to determine their needs and interests, their capability and self-efficacy can be enhanced to generate knowledge creatively as life-long learners. Teaching methods and strategies should also be designed to trigger students' collaboration, reflection, creativity and critical thinking as these skills can

support students to cope with the open learning materials and deal with the community of experts and peers outside the university. Instructors also need to empower their students and negotiate with them the tools of assessment that suit them. They should also evaluate their students in authentic and real-life contexts by directing them to solve real-life problems through conducting action research as the main principles of Education 3.0.

Overall, technology excessive integration, promoting students' self-determination, self-regulation, capability, collaboration, creativity, self-efficacy and reflective and critical thinking should be among the priorities of educational policymakers in higher education to make the move to distance learning smooth, especially during crises.

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