Students' Practices of 21st Century Skills between Conventional learning and Blended Learning

Hadiyanto Hadiyanto
Universitas Jambi, Indonesia, hadiyanto@unja.ac.id

Failasofah Failasofah
Universitas Jambi, Indonesia, failasofah.unja@gmail.com

Armiwati Armiwati
Universitas Jambi, Indonesia, armiwati@unja.ac.id

Mukhlash Abrar
Universitas Jambi, Indonesia, mukhlash.abrar@unja.ac.id

Yulhenli Thabran
Universitas Jambi, Indonesia, yulhenli@unja.ac.id

Follow this and additional works at: https://ro.uow.edu.au/jutlp

Students' Practices of 21st Century Skills between Conventional learning and Blended Learning

Abstract

The application of blended learning in higher education has practically increased through the years, this is however aimed to develop the students rare 21st century skills. Furthermore, the present study investigates the differences in learning process across one semester, and the research design comprised of quasi experimental method without conducting any pre-test, particularly for the conventional and blended learning class. Therefore, self-evaluation questionnaire on 21st century skills were distributed, and the experimental outcome revealed the significant skill practice performed by students in blended learning classes compared to the counterparts in conventional programmes. This learning method was assessed to contain soft and hard skills, in addition to an increased GPA. The aim of this study, therefore, is to investigate the impact of blended learning in course application, with the goal of optimizing students' 21st century skills and GPA.

Keywords

Introduction

Blended learning had been widely applied at higher education to promote students' knowledge and skill. This is due to the combination of face to face and online study approaches, while conventional method basically deals with traditional face to face system (Delialioğlu, 2012; Bryan & Volchenkova, 2016). Furthermore, blended and conventional learning are known to possess similar methods, structure, content, strategy and learning activities. This depends on teachers' ability to adopt, develop and inculcate standard learning components (Ananga and Biney, 2017).

The Indonesian higher education curriculum believes students center learning (SCL) are to be applied using both online and face to face learning in view of developing students' knowledge and skills (Ristekdikti, 2015). Furthermore, most E-learning platforms supports SCL where interactive activities are managed by teacher obliged to possess initiative and creativity skills needed for transforming SCL into learning activities with aim of encouraging students' integration, interaction, presentation, discussion, sharing, and group works, as a way to develop 21st century skills in this learning context.

According to Hadiyanto (2019) the 21st century skills developed during educational exercises is to be carried out through suitable learning strategy with activities in both physical and virtual classrooms. The progress of students' strategies depends on how teachers manage student to learn in addition to the procedures involved in delivering classroom contents. Meanwhile, good, creative with productive learning are accomplished when supported by designing systematic and innovative educational exercises to develop skills.

The use of SCL in Blended learning and teaching theoretically has an impact on increasing students' academic performances especially with soft and hard skills. This is however based on assumption and combination of the two different method of learning with wide opportunities for students to learn and develop Furthermore, practices of these skills occur mainly during students learning in both face to face and online platforms. This study is therefore aimed to determine one of the two learning modes capable for increasing student's practices of 21st century skills in a more effective way.

The Students' 21st Century Skills at University

The 21st century skills, especially soft and hard variety are important in higher education, hence the need for inclusion in the institutions' curriculum. According to Hadiyanto (2010) and Partnership for 21st Century Skills (2008), information technology have provided new graduates with the opportunity to simply acquire knowledge of any academic subject. The broader skills include retrieval and handling of digital technology information, communication and presentation, planning and problem solving, with social development and interaction critical for graduate employment. Sorensen et al. (2011) emphasized on the importance of skills development at higher education enable graduates function more effectively in the world of work and in life more generally.

The 21st century skills are usually acquired during university education irrespective of disciplines, although students equally require the knowledge, in order to attain success (Laura, et al., 2016; Hadiyanto, 2010). Furthermore, university plays a responsible role to strengthen the justification of higher education in developing students' (Ristekdikti, 2015; Washer, 2007). Also, based on the complexity and challenges, Hadiyanto (2019), Risitekdikti (2015) and Washer (2007) emphasized on the need for university curriculum to include the following contents:

- All students completing undergraduate degree programs ought to at least possess the minimum knowledge and skills in their specific fields.
- Also, undergraduates should acquire additional expertise in certain areas of value. These proficiencies shall be reflected through variations in the curricular objectives and learning experiences among universities.

The scholars are mandated to be acquainted with 21st century skill as part of the programme's curriculum.

According to previous research, soft and hard skills are best developed by a combination of practical and theoretical learning. Numerous effective educational strategies have been implemented including, active, collaborative, cooperative, inquiry and blended learning (Laura, et al., 2016: Adam et al., 2010). This means teaching at the university level no longer entails just physical lectures and slide presentations, but is now centred on the students who are encouraged to build their softs skills through various offline and online learning activities.

21st Century Skills in the present research context

This term is popularly used by researchers, academics, educators, employers and other professionals to describe the dexterity employees must have in order to remain in or enter global labour market. Also, similar expressions include key, core, adaptive, soft, generic, global, life, core, hard, interpersonal or essential skills (Hadiyanto, 2019; The Ontario Public Services, 2016; Laura et al., 2015; Marando A., 2012; Partnership for 21st Century Skills, 2008). Soft skills comprise of communication, IT, numeracy, learning, problem solving and team work skills (Hadiyanto, 2019). Meanwhile, the hard counterpart entails specific knowledge and skills related to one's major (Ristekdikti, 2015):

- *Communication skills* are vital for students to express ideas as group members or individuals of diverse backgrounds in order to make good decisions and come up with suitable solutions, negotiations, and conclusions during learning activities. It entail the ability to identify, access, organise and convey knowledge in both written and Oral English, as well as reliable listening skills (Hadiyanto, 2018; Washer et al., 2007).
- *Numeracy skills* are concerned with the ability to read, select, use, interpret, and apply numerical, graphical, spatial statistical and other related tools in learning activities. Furthermore, these talents enable students to develop the use mathematics for learning (Anders et al., 2018; Hadiyanto et al., 2010; Wahser, et al. 2007).
- *IT Skills* refer to proficiency in educational digital technology. The learners are expected to exploit these resources in the exploration and development of different forms of information (Anita et al., 2017 Hadiyanto et al., 2018).
- *Learning skills* involve the procedure and reason behind the acquisition, processing and memorisation of knowledge. Hence, students are in a better position to apply different these learning activities in the classroom and online environments (Shulamit & Yossi, 2017; Barbara, et al., 2008).
- *Problem solving skills* are assumed to influence the success in achieving educational goals as well as in *real life* endeavours even after graduation. The students ought to learn methods to systematically tackle difficulties in any circumstance (Delialioğlu, 2012; Hadiyanto, 2010).
- *Team work* does not simply refer to job completion. This skill also entails effective end-to-end communication to achieve goals together (Hadiyanto, et al., 2019a; Zalizan and Azman, 2005).

Hard skills consist of specific knowledge and skills in one's major (Ahlstrom et al., 2014; Marando, 2012; Washer, 2007). However, in this context, they are defined as the ability to utilize expertise acquired from one's major in work and study, usually in combination with the soft equivalent. Specifically, these proficiencies are practiced by the students through blended learning activities (Hadiyanto, 2019a; Ristekdikti, 2015; Ahlstrom et al., 2014; Marando, 2012; Washer, 2007):

- *Specific knowledge* entails theoretical, factual, and actual understanding acquired from a major study course (Hadiyanto, 2019a; Ahlstrom et al., 2014).
- *Specific skills* refer to how this specific knowledge is applied in a work environment (Hadiyanto, 2019a; Ahlstrom et al., 2014; Marando, 2012).

Blended Learning and Students' 21st Century Skills Development

Blended learning refers to a combination of the best features concerned with face-to-face and online lessons. For instance, interactive study meetings are executed to the students in the classroom, while virtual sessions filled with multimedia-rich materials are accessible by students anywhere and anytime through internet use (Ananga and Biney, 2017; Kara, 2016). The aims of these related activities include providing different modes of content delivery to encourage students' interaction, promoting the acquisition of knowledge and skills through physical classrooms, and the continuation of the learning processes electronically. Various educational activities and assignments organized in physical classrooms by teachers where students collaborate, are now capable of being held through online or electronic means (Sheridan, et.al, 2019). Moreover, student-to-student interactions and reflections are encouraged by the options of reporting and presenting these projects in an e-learning environment, and also affords the teacher the ability to guarantee clear directions and realistic goals for individual and collective tasks (Hadiyanto, 2019b; Rosenberg, and Foshay, 2007).

Numerous researches have previously enumerated some benefits of this form of study, including the improvement and motivation of learners, attitudinal enhancement, academic achievement, team work, skill acquisition, etc. Students are also granted diverse opportunities for the extension of knowledge, abilities and competencies beyond the classroom through online learning endeavours (Bourdeau, et al. 2018; Wichadee, 2017). With respect to the present study context, this merger is deemed able to develop students' 21st century proficiencies, regarding the integration of knowledge and competencies, further determined by the selection and implementation of delivery methods whether in the conventional class or on virtual platforms. Furthermore, suitable learning methods direct explicit focus on the advancement of soft skills, comprising the provision of interactive, explorative and co-operative opportunities to students, to facilitate the achievement of expertise and hard skills (Anita Singh & Lata Bajpai Singh, 2017; Glowa & Goodell, 2016).

The combination of conventional and online learning techniques alters the manner of education from classroom to student oriented, with the advantages of more flexible class schedules, current technology use, and the promotion of both physical and virtual teaching platforms (Ananga and Biney, 2017). All existing e-learning templates aim towards the advancement of student-centred education, for instance, video presentations, group discussions and projects, information and resources sharing, etc., however, the tutor is required to exert greater creativity and willingness in the improvement of the teaching and pedagogical skills employed (Braun, 2017). The efficacy of this joint teaching process increases when opportunities for engagement, interaction, collaboration,

and execution of activities are afforded, as these practices are directed at the edification of students in both learning programs.

The practice and development of soft skills including communication, IT, numeracy, team work, innovation, problem solving, and understanding are benefits of the combined educational approach, and the encouragement of the students to acquire hard skills including course comprehension and aptitudes are additional advantages. According to Ma, Li and Liang (2019), the potentials to communicate, learn, collaborate, incorporate, participate, use, produce, and share information are created by the internet. Previously, Shand & Susan, (2018); Shand & Glassett, (2017) and Adams et al. (2010) revealed blended learning arrangements proffer avenues for students to practice employable qualities, with the provision of opportunities and flexible occasions to participate in classrooms, and to continue with these endeavours through real-time experiences. These activities have increased the emphasis on engaging students to communicate, connect, liaise, and explore, use technology and supported applications, accomplish online presentations through synchronous and asynchronous methods, and intensify the use of current skills rather than depend solely on direct educational techniques. Reports of the benefits of blended learning have been stated in the preceding literature, and educators are encouraged to select and utilize the appropriate delivery methods to create additional opportunities for students to apply each part of the compiled modern employable and teachable traits. Therefore, the aim of this research was to demonstrate the benefits of soft skill practices generated by the blended learning approach in comparison with face-to-face methods.

Method

The study employed a quasi-experimental non-equivalent group design with post-test only. In this design, a group of participants who was exposed to blended learning method was compared with a non-equivalent group who was not exposed to the method. Pre-test feature was irrelevant because the research investigated students' natural practices in relation to typical and blended learning forms (Jhangian, et al., 2019, Neuman, 2003; Cohen, Manion, and Morrrison, 2000). This was attributable to the goal of the research being was the comparison of exposures to these methods and not the measurement of modern skill levels of students. The conventional strategy was applied to Class A and the blended learning method in Class B, with a quantitative procedure employed for the measurement of response through self-evaluation questionnaires.

Table 1 Quasi experimental design without pre-test

Class	Treatment-(Independent Variables)	Post-Assessment (Dependent Variables)
Control(Conventional)	Y^1	X^1 X^2
Experiment (Blended Learning	Y^2	X^1 X^2

X^1 = Soft Skills Practice
X^2= Hard Skills Practice
Y^1= Control Group (Conventional)
Y^2= Experiment Group (Blended Learning)

The resultant population of respondents was 458 students from the English Education department at a University in Indonesia, and the performance of this research at a single program created difficulties in the randomization and allocation of the courses to the specified groups. A more feasible option, therefore, was the additional selection of third year students as candidates, who made up a sum of 86 individuals separated into classes A, B and C. The researchers selected the

third year students because they had followed different learning methods since the first year of study including blended learning and conventional learning. So, they were able to differentiate between the practices of each skills, and then it would be easy for them to respond the questionnaire appropriately.

The use of random sampling proved impossible in quasi experimental study such as for this study due the sample had been grouped naturally in three classes, therefore convenient sampling technique was applied by selecting classes A and B as the objects (Jhangian, et al., 2019). Twenty four (24) students each were purposely chosen from the initial number of 27 and 29 students in A and B respectively to constitute the research sample, as these candidates had attended 9 courses in the current semester, while the remainder had taken 8 only. Consequently, a total of 48 students participated in this study.

The G* power was employed to estimate the sample size, and although Hair, et al., (2006) suggested 20 participants in each section α 0.05 with an effect size 0.5 and above, an independent *t*-test utilizing 24 samples in each section yielded an effect size of 0.6 and above. In addition, eighteen educators were involved in the lecture of the 9 courses, with nine teachers employing conventional learning methods (Class A), and the other nine allocated to teach with blended learning techniques (class B). The courses suggested the enhancement of soft and hard modern skills through the implementation of teaching and learning in both classes and the lessons required students to meet in class once a week, for a semester made up of 16 weeks.

For the experimental group, nine teachers were sent to a workshop in an effort to develop comprehensive course syllabus enclosed with 21st century skills prior to semester commencement. Of the nine, five male and four female, four of them had 6 to 10 years teaching experience, three had 11 to 15 teaching experience and two had more than 15 teaching experience. These abilities were described and specified in the course objective. Specifically, soft and hard skill indicators were mentioned in the meeting structure section. Figure 1 exemplifies the course content description of a curriculum applied in this study.

Figure 1.
A*n example of course content description of a syllabus.*

Course: Research Methodology

A.   Course Description:
The aim of this course is to introduce the students to basic scientific research methods, particularly quantitative and qualitative research applicable to ELT. Students are expected to gain significant exposure in research methodology, research design, experiment and action research, sampling techniques, research instruments, and overall overview of the data analysis. As a result, the students were discovered to be better equipped in research methodology.
  B. The Objective:
  C. Hard Skills
     1. To provide the students with the knowledge of research methodology
     2. To enable students design a quantitative and qualitative research.
     3. To enhance the research on language teaching.
     4. To assess and improve the students' readiness in conducting research.
D.   Soft Skills
    To empower students with the following soft skills:
     1. Excellent verbal and written communication
     2. Information Technology (IT)
     3. Numeracy
     4. Problem Solving
     5. Effective learning
     6. Team work.
E.   **Strategy:** Blended learning
F.   **Method:** classroompresentation, group work and discussion, video presentation.
G.   **Meeting Structure and Schedule**

Profile of Students' participants

Table 1 displays student participation in term of gender, age, and CGPA. Majority of the respondents were female in both classes A and B, while most of the students were 20 years of age with CGPA spread evenly in the range of 2.50 – 2.99, 3.00 – 3.49, and 3.50 – 4.00.

Table 1.
Students' participant profile.

Gender	Class A Conventional learning	Class B Blended Learning
Male	7 (29.2%)	8 (33.3%)
Female	17 (70.8%)	16 (66.7 %)
Total	24 (100%)	24 (100%)
Age	**Class A** **Conventional learning**	**Class B** **Blended Learning**
19	5 (20.8%)	5 (20.8%)
20	18 (75.0%)	19 (79.5%)
21	1 (4.2%)	-
Total	24 (100%)	24 (100%)
CGPA	**Class A** **Conventional learning**	**Class B** **Blended Learning**
2.50 – 2.99	8 (33.3%)	6 (25%)
3.00 – 3.49	9 (37.5%)	9 (37.5%)
3.50 – 4.00	7 (29.2%)	9 (37.5%)
Total	24 (100%)	24 (100%)

Instrument, Reliability, and Validity

Self-report questionnaires with 5-point Likert scales, including never, rarely, sometimes, often, and very often, were used to measure the students' competence in 21st century skills. This assessment involved conventional and blended learning. Furthermore, the surveys were classified into soft and hard skills. Soft skills were further categorized into 6 sub-constructs, including communication, IT, numeracy, learning, problem solving, and team work, while hard skills formed two sections, termed course knowledge and course skills. The questionnaires of the study have been previously developed and reported by Hadiyanto et al. (2018), and randomized respondents were applied. The results recommended consistent and corrected item-total correlation of the questionnaires as also reported in Hadiyanto et al. (2019). However, in the present study reliability and validity were retested. Pallant (2011) and Hair et al. (2009) proposed the Cronbach alpha coefficient .60 for a construct consisting of 10 elements and below, while coefficient .70 was recommended for more than 10, although 0.30 was acceptable. In this study, consistency analysis based on overall instrument of 21st century skills resulted in Cronbach alpha coefficient .938. This condition also generated a constant above .70 for soft and hard skills. Further evaluation revealed all sub-components 21st century skills had corrected item-total correlation at 0.30 and α level above .60. In simpler terms, the instruments were known to be reliable and valid for measuring student performance on 21st century skills through significant learning activities.

Table 2.
Reliability of self-evaluation questionnaire.

The 21st Century Skills Practices	Number of Items	Corrected item-total correlation	Cronbach Alpa
Communication Skills	8	.32 - .62	.75
IT	6	.39 -.55	.74
Numeracy	6	.39 - .55	.73
Learning	11	.40 - .74	.85
Problem Solving Skills	7	.37 - .69	.80
Team Work	8	.30 - .62	.72
Soft Skills	41	-	.93
Course Knowledge	5	.33 - .55	.68
Course Skills	5	.30 - .51	.68
Hard Skills	10	-	.77
Overall 21st Century Skills	55	-	.93

Data Analysis

Descriptive analysis was employed in reporting the mean score and the performance level of 21st century skills between the two classes. The results were then compared in detail to each component and its items in order to determine the nature of the differences. In addition, the students' response between Likert scales 1- 5 were calculated and interpreted in 5skill levels as shown in Table 3.

Table 3.
*Interpretations of mean scores.*

Mean Score	Interpretation
1.00 - 1.80	Very Low Frequency
1.81 - 2.60	Low Frequency
2.61 - 3.40	Medium Frequency
3.41 - 4.20	High Frequency
4.21 - 5.00	Very High Frequency

Independent sample t-test was applied for further analysis in order to determine the level of differences between conventional and blended learning in acquiring 21st century skills. Based on Pallant (2011) recommendation, the test appeared more appropriate in comparing the two learning groups with sample size below 30, where significant values (p) between 0.05 - 0.1 were used to analyse two comparative scores.

Results

Figure 2 displays the mean score comparison of 21st century skills between conventional and blended learning and reveals the student competence in these abilities acquired through blended learning were higher compared to conventional mode. The results also showed the students with blended learning practice primarily in term of soft and hard skills. In addition, other sub-components were also greater compared to conventional learning.

Figure 2.
Students' 21st skills century practices between conventional learning and blended learning class.
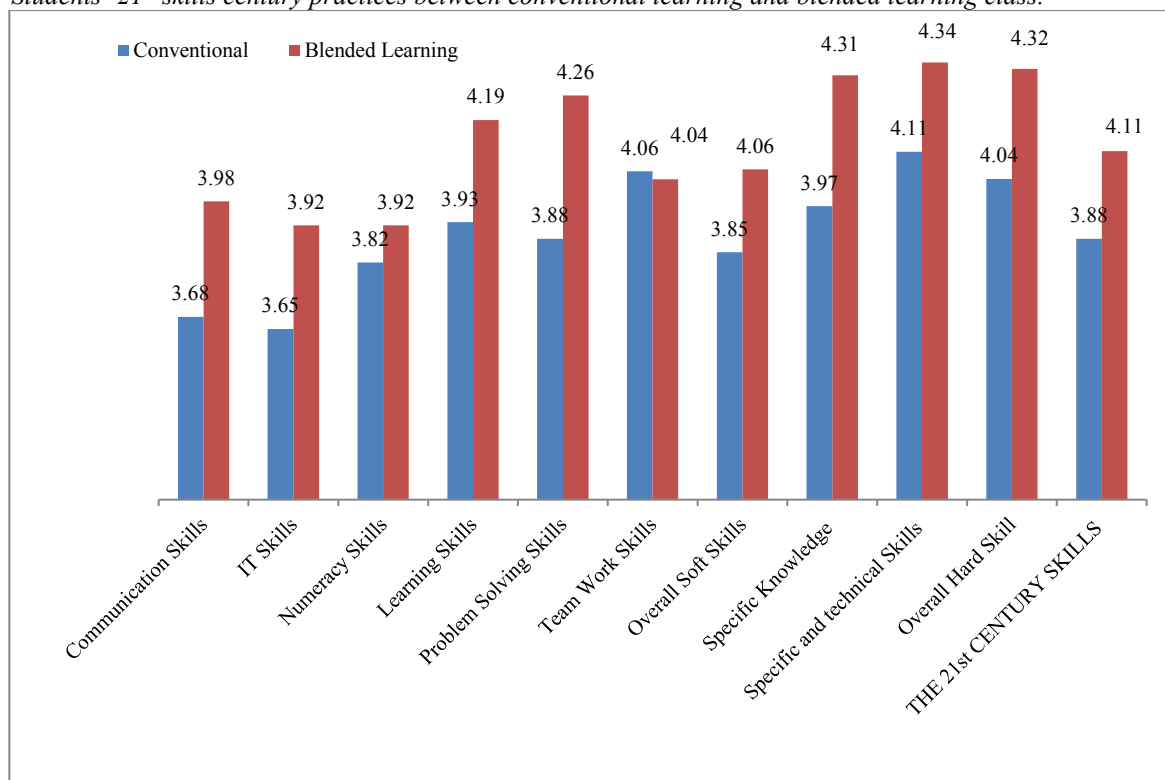
Soft Skills

Students' soft skills include communication, IT, numeracy, problem solving, and team work. Table 4 represents the descriptive analysis findings in terms of communication skills for both conventional and blended learning. This record further revealed the students in blended learning (3.98) practiced more overall communication skills compared to conventional learning (3.68). In every element of communication skills, the blended approach showed higher mean scores than conventional class, except the element A6 (communicating some ideas in writing). This finding

accused the blended learning class for providing more practical opportunities for students, although varying mean scores were obtained by both student groups as all items were rated at high level practices except A1 (doing presentation), with very high level in blended learning.

Table 4.

Mean comparison of communication skill practice between conventional learning and blended learning class.

Communication Skills		Conventional Class		Blended Learning	
		Mean	S.td	Mean	S.td
A1.	Doing presentation	3.68	.34	4.29	.55
A2.	Using Different formats	3.65	.46	3.79	.51
A3.	Using Vocabularies, expressions and body language	3.82	.42	4.08	.58
A4.	Summarizing key issues	3.93	.43	3.96	.62
A5.	Giving feedback	3.88	.42	3.88	.61
A6.	Communicating some ideas in writing	4.06	.31	3.83	.76
A7.	Writing a report	3.85	.26	4.00	.42
A8.	Summarizing key issues (written)	3.97	.26	4.00	.66
Overall		3.68	.31	3.98	.38

Table 5 shows the students in blended learning (3.91) practiced more IT Skills including all the elements compared to conventional class (3.65). However, the mean score of both groups were in the range of high practice level for all elements of IT skills. Also, no item was practiced at very high level for both student categories.

Table 5.

Mean comparison of IT skills practice between conventional learning and blended learning class.

IT Skills		Conventional Class		Blended Learning	
		Mean	S.td	Mean	S.td
B1.	Selecting relevant information from IT sources	3.79	.83	3.88	.80
B2.	Sharing references and resources using IT and applications	3.67	.70	3.92	.83
B3.	Developing assignments in the form of text, image, chart, etc.	3.50	.51	3.71	.69
B4.	Presenting using some illustrations in power point	3.71	.69	4.13	.68
B5.	Using software or application features	3.63	.58	4.17	.64
B6.	Developing the structure of presentation	3.58	.65	3.71	.55
Overall		3.65	.46	3.91	.39

Table 6 shows the overall mean score of numeracy skill in both blended and conventional learning were at a high level. Blended class yielded larger values and more frequent numeric practice compared to conventional learning (3.92). Also, no item was practiced at a very high level for both groups.

Table 6.
Mean comparison of numeracy skill practice between conventional learning and blended learning class.

Numeracy Skills		Conventional Class		Blended Learning	
		Mean	S.td	Mean	S.td
C1.	Reading tables, charts, graphs and numbers	3.75	.79	3.75	.68
C2.	Measuring learning activities and outcome	3.62	.49	3.88	.61
C3.	Presenting based on points but calculable	4.12	.61	3.92	.50
C4.	Labelling tables. charts and graphs	3.78	.75	3.92	.83
C5.	Managing time for working on assignment	3.83	.63	4.17	.70
C6.	Identifying the relevant information sources	3.87	.61	3.88	.68
Overall		3.81	.41	3.92	.42

Blended learning class yielded higher mean score in terms of practice in all items than conventional learning. This category rated 7 elements at very high level, including D1, D2, D3, D4, D5, D6, D7, D8, and D9 with mean score range of 4.20 – 5.00, while conventional class students rated only D1 at very high level (Table 7).

Table 7.
Mean comparison of learning skills practice between conventional learning and blended learning class.

Learning skill		Conventional Class		Blended Learning	
		Mean	S.td	Mean	S.td
D1.	Improving academic performance	4.25	.53	4.24	.61
D2.	Assessing the effectiveness and efficiency	3.92	.50	4.26	.68
D3.	Identifying factors impacted on learning outcomes	3.92	.65	4.23	.53
D4.	Setting realistic targets and plan	3.88	.80	4.33	.64
D5.	Learning independently and be responsible	3.92	.78	4.42	.50
D6.	Identifying ways my work best	4.08	.58	4.21	.72
D7.	Reviewing what and how to learn	3.75	.79	3.88	.74
D8.	Consulting with lecturers	3.79	.83	3.96	.69
D9.	Adapting learning strategy	3.83	.64	4.21	.66
D10.	Comparing information from various resources.	3.92	.65	4.17	.64
Overall		3.93	.43	4.19	.44

Table 8 shows the students in blended learning (4.25) practiced more overall problem solving skills compared to conventional learning (3.88), including all the components. Students in blended learning practiced five problem solving skills at very high level, but only one at high level. Meanwhile, conventional class students attempted all problem solving skills at high level.

Table 8.
Mean comparison of problem solving skill practice between conventional learning and blended learning class.

Problem solving skill		Conventional learning class		Blended Learning	
		Mean	S.td	Mean	S.td
E1.	Identifying a problem	3.88	.45	3.96	.75
E2.	Solving problems with several ways	3.92	.93	4.33	.64
E3.	Using different methods to analyses a problem	3.92	.58	4.29	.75
E4.	Accommodating diverse perspectives	3.71	.86	4.46	.59
E5.	Solving problems by resources provided	4.00	.59	4.24	.68
E6.	Presenting an approach to solve a problem	3.92	.58	4.25	.60
Overall		3.88	.42	4.25	.61

Table 9 reports the student in blended and conventional learning class rate team work practice at a high level in the range 3.40 – 4.20, and also all the components. Blended learning practiced the elements, including F2, F4, F5, and F8 slightly more frequent compared to conventional students. However, students in conventional class practiced items F1, F3 and F6 slightly more frequent than blended learning.

Table 9.
Mean comparison of team work practice between conventional learning and blended learning class.

Team work	Conventional Class		Blended Learning	
	Mean	S.td	Mean	S.td
F1. Learning activities in a group	3.83	.48	4.04	.62
F2. Having conversations with different races in learning	4.38	.49	4.17	.56
F3. Working in team	3.79	.59	3.83	.70
F4. Resolving conflicts in team work	4.13	.54	4.00	.51
F5. Giving feedback to improve team work	3.83	.56	4.17	.70
F6. Keeping yourself and others motivated	4.04	.62	3.88	.61
F7. Respecting diverse perspectives	4.13	.54	4.08	.65
F8. Thinking and offering ideas to a group work	4.00	.51	4.13	.80
Overall	4.17	.64	4.03	.41

Hard skills

Table 10 denotes the blended learning students (4.33) with more mean practice scores of overall hard skills compared to conventional delivery (4.07). Furthermore, blended mode revealed the practices of hard skills for both component course knowledge and course skills were higher compared to conventional class and also in all the elements. Based on the level of practices in terms of mean score, blended learning students rated overall hard skills, course knowledge, course skills and all items except item F2 at very highly, while for conventional learning class, these parameters were rated higher in all items except F6.

Table 10.
Mean comparison of hard skill practices between conventional learning and blended learning class.

Course Knowledge	Conventional Class		Blended Learning	
	Mean	S.td	Mean	S.td
G1. Presenting course content specifically both oral and writing	4.00	.51	4.21	.83
G2. Discussing specific course content with your colleaque	3.96	.46	4.17	.87
G3. Connecting course content across topics	3.96	.46	4.58	.58
G4. Answering questions, giving specific and practical explanations	4.13	.45	4.33	.70
G5. Contributing specific ideas of course content in group work	3.79	.59	4.25	.68
Overall Course Knowledge	3.97	.26	4.31	.50
G6. Practicing the course content knowledge	4.21	.51	4.33	.64
G7. Applying what has been studied	4.08	.50	4.29	.62
G8. Applying course skills in practical assignment	4.04	.62	4.33	.64
G9. Giving an example of the course content practices	4.21	.51	4.33	.64
G10. Improving and updating course skills	4.00	0.29	4.42	.50
Overall Course Skills	4.11	.25	4.34	.41
Hard Skills	4.04	.18	4.33	.40

The Difference in Students' 21st Century Skill Practices between Conventional Learning Class and Blended learning Class

Soft Skills

Independent sample *t*-test was conducted to determine the statistical differences in soft skill practices between conventional and blended learning class. Table 11 observes a significant variation in terms of overall soft skills ($\bar{x}$ different= .21 t = 2.53, *p* < .05). In each component, major diversities were also observed in terms of communication skills ($\bar{x}$ difference =.301, t =2.91, *p* < .05), IT Skills ($\bar{x}$ difference =.270. t =2.20. *p* < .05), numeracy ($\bar{x}$ difference =.097, t=.802, *p* <.05), learning skills ($\bar{x}$ difference =.266, t =2.12, *p* < .05) and problem solving skills ($\bar{x}$ difference =.375, t =3.08, *p* < .05). The variation referred to higher mean scores in soft skill practices using blended learning compared to conventional method. In addition, blended learning mode is known to contribute to the high rate of 21st century skill empowerment. However, no significant differences occurred in team work ($\bar{x}$ difference =.020, t =.197, *p* > .05) between both groups.

Table 11.
Independent t-test between conventional learning and blended learning class toward soft skills.

Dependent Variable	Independent Variable (Group)	N	$\bar{x}$ different	t	*p*	Effect Size (d)
Communication Skills	BL Class	24	.30	2.91	.00	.84
	Conventional Class	24				
IT Skills	BL Class	24	.27	2.20	.03	.63
	Conventional Class	24				
Numeracy	BL Class	24	.09	.80	.42	.23
	Conventional Class	24				
Learning Skills	BL Class	24	.26	2.12	.03	.61
	Conventional Class	24				
Problem Solving	BL Class	24	.37	3.08	.00	.89
	Conventional Class	24				
Team Work	BL Class	24	.02	.197	.84	.05
	Conventional Class	24				
Soft Skills	BL Class	24	.21	2.53	.01	.73
	Conventional Class	24				

p (sig.) at 05
Effect size (d) >.5

Table 12 presents the independent sample *t*-test between conventional and blended learning class towards hard skills. The results varied significantly between both groups in terms of overall hard skills ($\bar{x}$ difference =.287, t= 3.21, *p* < .05), specific knowledge ($\bar{x}$ difference = .341. t=2.98, *p* < .05) and specific skills ($\bar{x}$ difference = .233, t = 2.36, *p* < .05). These observations implies blended learning encourages students to practice overall hard skills, specific knowledge and skills more frequently compared to conventional learning.

Table 12.
Independent t-test between conventional learning and blended learning class toward hard skills.

Dependent Variable	Independent Variable (Group)	N	x̄ different	t	p	Effect Size (d)
Specific Knowledge	BL Class	24	.34	2.98	.00	.86
	Conventional Class	24				
Specific Skills	BL Class	24	.23	2.36	.02	.68
	Conventional Class	24				
Hard Skills	BL Class	24	.28	3.21	.00	.92
	Conventional Class	24				

p (sig.) at 05
Effect size (d) >.5

Table 13 shows the result of comparison test between conventional and blended learning class toward 21st century skills in terms of combined scores of soft and hard skills. Moreover, significant changes also occurred between conventional and blended learning class toward the practice of 21st century skills (x̄ difference = .214, t = 2.27, $p < .05$). The finding implies blended learning class practiced overall 21st skills more frequent compared to conventional learning.

Table 13.
Independent Sample t-test conducted to control group and experiment group toward -test of 21st century skills.

21st Century Skills	N	x̄ different	t	p	Effect size (d)
BL Class	24	.21	2.77	.00	.80
Conventional Class	24				

p (sig.) at 05
Effect size (d) >.5

Academic Achievement

Independent sample *t*-test investigated the effects of blended learning class towards student's CGPA after undertaking 9 courses at the current semester. Table 14 shows the blended learning class obtained higher CGPA compared to conventional mode (mean different= .291, t = 2.44, $p < .05$). This situation shows blended learning also contributed to higher students' CGPA. In addition, there was a consistency in the increase of 21st century skill practices and students' GPA in blended learning class.

Table 14.
Independent Sample t-test conducted to control and experiment groups towards students' GPA.

Present GPA	N	Mean Different	t	p	Effect size (d)
BL Class	24	.29	2.49	.01	.72
Conventional Class	24				

p (sig.) at 05
Effect size (d) >.5

Discussion

There has been a huge increase in the use of different technologies to support Education over the years. The findings from this study show students in BCL practice overall 21st century skills significantly high compared to the conventional class. In addition, blended learning integrates practices of the main components of 21st century model (soft and hard skills) compared to conventional group. This model is a more student-centric approach which allows students to become fully immersed in ICT, Numeracy, problem solving and team work in contrast to the conventional category. However, different mean score was obtained from groups of students, no soft skills item was rated in the range of average level and below. The blended class recorded mean score of soft skills comparatively higher to conventional learning. According to Ananga & Biney (2017), the blended model gives opportunity for the traditional face-to-face classroom setting to combine with computer-mediated activities. To this end, students have more opportunities to interact, share, discuss and give feedback. Furthermore, participants from different perspective are granted convenience and flexibility of the online environment. As a result, there is increase in e- learning activities and a significant impact on 21st century practices. According to Ma at al. (2019), online communications allow students to learn from others, bequeath opportunities to collaborate, incorporate, participate, use, produce, and share information. In addition, Adams et al. (2010) acknowledged blended education as an improvement to employee soft skills in communication, leadership, learning, IT and innovation.

Furthermore, students in blended class show higher GPA achievement compare to the conventional category. There is an obvious logical connection between hard skills practices and excellence. In a study by Bourdeau et al. (2018), blended learning indicates high positive impact on the GPA and hard skills. This study countered issues related to online failure in facilitating students Education and course content delivery. According to a report by Rosenberg & Foshay (2007), e-learning promotes students proficiencies, knowledge and competence, specifically in the 21st skills activities.

Prior to resumption, course syllabuses were designed by teachers to facilitate a student-centered platform for the 21st century practices in both conventional and blended platforms. The conventional and blended learning delivered course content through lecturing, group discussions, group project, individual assignment, and presentation classroom purpose. In e-learning platform, most courses are integrated in several ways using video presentation, ideas, resource pool, assignment, quiz, discussion, question and answer related to a particular program. Furthermore, students were able to develop concepts, by selecting and combining computer based activities for presentation and assessment. According to Ananga & Biney (2017), the model flexibility allows students to optimize the 21st century related practices and maximize the acquisition of hard skills as well as other academic achievement.

Blended learning provides the students with various opportunities and time flexibility to interact, communicate, present, work in groups, discuss, share ideas, and resources at any location (Fischer and Hanze, 2019). This results in the intense practice and promotion of soft skills including communication, IT, numeracy, learning, problem-solving, and teamwork. The skill training also intensely assists in the acquisition of higher academic achievements. This was confirmed by the students' better practice of hard skills in blended rather than conventional learning classes. According to Wichadee (2017), the use of e-learning had significantly impacted better on the students' oral English proficiency. Furthermore, students exposed to blended learning activities acquire more of the 21st century skills practices, including softs skills, hard skills, and GPA in this research.

The numeracy and team works were among the components of soft skills showing insignificant differences between the conventional and blended learning classes. These findings imply online learning has no additional value on the students' practice of numeracy skills. According to Anders et al. (2018), the difference was insignificant whether the participants were assigned to face-to-face or blended learning arms. The rationale behind these studies of student's opportunities to exercise this skill in online learning was narrow compared to other expertise training. These practices are more passive, therefore, some numeracy indicators are impossible to conduct in online learning.

This study indicated the difference in students' teamwork practices between conventional and blended learning was insignificant. According to Gump et al. (2011), participants in online learning sections are more negative about group work compared to the face to face sections. This is because of the online learning norms of working individually and asynchronously, therefore these students are less satisfied with group work. The incidence of fewer communication channels, poor immediacy of face to face meetings, and other discrepancies in the two learning environments, has led to the inability for online learning students to resolve logistical difficulties associated with working collectively.

The evidence of this research contributes to the theoretical and practical side of students and graduates of the 21st century skill development through teaching and learning practice. This study provides new information to broaden the teachers' advantage while using a blended learning strategy to promote these skills for practical contributions. The literature of this strategy used obtained more value in the different contexts of learning, theoretically. This contributes some type of evidence this form of learning gives wider opportunities for students to practice. The policymakers at various Universities are expected to be informed by this research and consider developing students' 21st century skills through blended learning activities. Meanwhile, further study on the use of this tactic is necessary to obtain more evidence on the effectiveness of blended learning in comparison with other learning strategies. The efficacy study of this approach in the context of training of 21st century or other professional skills at the university level is essential. This is potentially through an experiment or big scale survey research as well as investigating through qualitative study to know in depth the ways this strategy contributes to developing this expertise.

However, in reflecting to Covid-19 pandemics toward this research finding, the students promoting of 21st century skills might be not optimal due to the omitting of face to face learning. It would impact on less practices level of 21st century's skills specifically related to communication skills, IT skills, problem solving skills, and learning skills, and both hard skills specific knowledge and specific skills. The implementation of these skills into practice might be complicated since the Covid-19 pandemics requires teachers to fully adopt the delivery of courses to students online. Addressing this issue, policy maker and researchers are highly recommended to cooperate to seek for appropriate and effective online applications in order to be able to meet pedagogical principles as face to face learning standard for immediate future challenges.

Limitation

This study was conducted by third-year students with a total number of 48 out of 458 in the English education department, therefore the result does not represent all the students' practices toward 21st century skills. The purpose of this research was to compare the conventional and blended modes of learning for these practices. Also, there was no pretest obtained because the present study did not aim to measure the participants' performance or achievement due to the

difficulty in measurement. The aim was to rather compare the two groups, therefore there is no applicable measurement to assess the level of operation. The intensity of 21st century practices through the learning process is investigated at this time. Furthermore, difference in academic achievement obtained between these groups was not as a result of the effect on blended learning method. This indicates the success due to an increase in academic achievement, soft and hard skills levels as well as overall 21st century skills practices. The research was conducted with participants of EFL students. However, researchers did not see the impact of these strategies on specific course skills, including writing. This method was further compared to these skills for both the soft and hard categories in 9 courses between the groups exposed to blended and conventional processes.

Conclusion

This study showed the different level of 21st century skills practices, including GPA between conventional and blended learning class. In addition, a total of nine courses were learnt by students divided into class A and B, representing conventional and blended learning, respectively. The result demonstrated the ability for implementation to provide more opportunity to practice skills. Furthermore, students are able to explore ideas, discuss, learn strategies, ask questions and give feedback, using ICT to communicate, and solve problems. Also, the practice of soft and hard skills has become more frequent and has great impact on the expected abilities, including academic achievement. This outcome demonstrates the importance of blended learning, the combination of face to face classroom and online learning. Although, there is also a consequent increased in the contribution towards students' current practices of 21st century skills. Teachers are expected to design their learning materials with appropriated method and technique of blended learning to give a wider change for students to practice and boost their performance of 21st century skills. Consequently, teachers are encouraged to apply these techniques, explore and improve the application, in order to enhance the students' capabilities based on pedagogical principles. This outcome also provided additional information on virtual education as a tool to develop knowledge and skills. In addition, there is a potential for further investigation in this regard, which is expected to examine the effect of blended learning on students' 21st century abilities through experiments across discipline. Moreover, some present and previous studies have proved the possible benefits. In conclusion, the result obtained has shown some potential innovations for consideration by policy makers whether at faculty and university level to be a part of the curriculum content.

Acknowledgments

REFERENCES

Adams, J. M., Hanesiak, R., Morgan, G., Owston, R., Lupshenyuk. D., & Mills, L. (2010). Blended Learning for Soft Skills Development: *Testing a Four-Level Framework for Integrating Work and Learning to Maximize Personal Practice and Job Performance*. Canadian Council on Learning (CCL). Available at http://en.copian.ca/library/research/ccl/blended_learning/blended_learning.pdf

Ananga. P. & Biney. I. K. (2017). Comparing Face-to-Face and Online Teaching and Learning in Higher Education. *MIER Journal of Educational Studies*. Trends & Practices 7. (2) pp. 165 – 179.

Ahlstrom, A. W., Yohalem, N., David, Ji. P., Hillaker, P. & David, P. (2014). From Soft Skills to Hard Data: *Measuring Youth Program Outcomes*. Retrieved from http://www.search-institute.org/sites/default/files/a/DAP-Ready-by-21-review.pdf

Anders, J., Dorsett. R. & Stokes, L. (2018). The relative effectiveness of blended versus face to-face adult English and maths learning. – National Institute of Economic and Social Research. Department of Education. Research report. http://www.gov.uk/government/publications

Singh, A., & Singh, L. B.. (2017). E-Learning for Employability Skills: Students Perspective. Procedia Computer Science, Vol 122. 400-406. www.sciencedirect.com

Barbara, S. & Wagner, P. (2008). Vienna E-Lecturing (VEL): learning how to learn self-regulated in an internet-based blended learning setting. International journal on e-learning. 7 (4). pp 703-723. https://www.learntechlib.org/primary/p/24292/

Bourdeau, Debra T., Griffith, Kelly V., Griffith, John C., & Griffith, John R. (2018). An Investigation of the Relationship between Grades and Learning Mode in an English Composition Course. *Journal of University Teaching & Learning Practice*. 15(2). https://ro.uow.edu.au/jutlp/vol15/iss2/3.

Braun, M. (2017). Comparative Evaluation of Online and In-Class Student Team Presentations. Journal of University Teaching & Learning Practice. 14(3). http://ro.uow.edu.au/jutlp/vol14/iss3/3.

Bryan, A. & Volchenkova, K.N. (2016). Blended learning: Definition, Models, Implications for higher education. *Bulletin of the South Ural State University. Ser. Education. Educational Sciences*. 8. 2. pp. 24–30. DOI: 10.14529/ped160204

Cohen, L., Manion, L. & Morrison, K. (2000). Research Methods in Education. Routledge Falmer. London.

Delialioğlu, Ö. (2012). Student engagement in blended learning environments with lecture-based and problem-based instructional approaches. *Educational Technology & Society*. Vol. 15. pp. 111-228.

Fischer, E. & Hänze, M. (2019). Back from "guide on the side" to "sage on the stage"? Effects of teacher-guided and student-activating teaching methods on student learning in higher education. *International Journal of Educational Research*. Vol. 95 (2019) 26–35

Glowa, L. & Goodell, J. (2016*)* Student-Centered Learning: Functional Requirements for Integrated Systems to Optimize Learning Vienna. *VA.: International Association for K-12 Online Learning (iNACOL)*. https://www.fetc.org/materials/C223.pdf

Hadiyanto. (2010). The Development of Core Competencies at Higher Education: A Suggestion Model for Universities in Indonesia. *Educare*. 3(1) Bandung. http://journals.mindamas.com/index.php/educare/article/view/224/223

Hadiyanto. (2019a). Enhancing Students' Core Competencies by Applying Blended Cooperative E-learning (BCeL) in Teaching and Learning Process. Advances in Social Science. Education and Humanities Research. Volume 253. Pp 169-173.

Hadiyanto, H. (2019b). The EFL Students' 21st Century Skill Practices through E-Learning Activities. *IRJE (Indonesian Research Journal in Education). 3*(2). 461-473. https://doi.org/10.22437/irje.v3i2.8036

Hadiyanto. Syahrial. Fajaryani, N. Masbirorotni. & Juwita, M. (2018). Constructing the Measurement of EFL Students' Core Competencies Practices in Learning Activities. TOJET. Vol. 17. No. 3. pp. 16-25.

Jhangiani, S. R., Chiang, A. I-Chant, Leighton, C. D., & Cuttler, C. (2019). Research Methods in Psychology 4rd American Edition. https://kpu.pressbooks.pub/psychmethods4e/

Hair, J.E. Anderson, R.E. Tatham, R.L., & Black, W.C. (2009). Multivariate Data Analysis. Ed. Ke-5. Upper Saddle River: Prentice Hall.

Kara, S. (2016). How and Why? Edmodo as a Blended Learning Tool: A Brief Overview of Usage and Research Proceedings of ISERD International Conference. Bali. Indonesia. 9th May. https://pdfs.semanticscholar.org/.

Kehrwald, B. A. & Parker, B. (2009). Editorial - Implementing online learning: Stories from the field. *Journal of University Teaching & Learning Practice*, 16(1), 2019. https://ro.uow.edu.au/jutlp/vol16/iss1/1

Laura, H., Lippman, Renee. R, Carney, R., & Kristin, A. (2016). Moore Child Trend. *Workforce Connections: Key "Soft Skills" That Foster Youth Workforce Success: Toward a Consensus across Fields.* https://www.usaid.gov/sites/default/files/documents/1865/KeySoftSkills.pdf

Ma, J., Li, C., & Liang, H-Ning. (2019). Enhancing Students' Blended Learning Experience through Embedding Metaliteracy. *Education Research International*, Volume 2019. pp 1-9.

Marando, A. (2012). Balancing Project Management Hard Skill and Soft Skills. Master of Science in Management of Projects and Programs Rabb School of Continuing Studies Division of Graduate Professional Studies Brandeis University. Braindeis University. https://www.dphu.org/uploads/attachements/books/books_5946_0.pdf

Neuman, W. (2003). Social research methods. Boston: Allyn & Bacon

Pallant, J. (2011). A Step by Step Guide to Data Analysis Using SPSS for Windows (version 12). Open University Press. Buckingham. Philadelphia.

Partnership for 21st Century Skills. (2008). 21st Century Skills. Education & Competitiveness: A Resources and Policy Guide. [Online]. Retrieved from: http://www.p21.org/storage/documents/ 21st_century_skills_education_and_competitiveness_guide.pdf. Accessed on 21th February 2017.

Ristekdikti (2015). Standar Nasional Pendidikan Tinggi: *Direktorat Penjaminan Mutu*. [Online]. Retrieved from: http://bpm.umsida.ac.id/wp-content/uploads/2017/08/3.-Standar-Nasional-Pendidikan-Tinggi-SN-Dikti.pdf

Rosenberg, M., Foshay, R. (2007). E-Learning: Strategies for Delivering Knowledge in the Digital Age: New York: McGraw-Hi.

Senthil, K. N., & Sw, R. (2016). Enhancement of Skills through E-Learning: Prospects and Problems. *The Online Journal of Distance Education and E-learning.* 4 (3).pp.24 -32 www.tojdel.net

Shand, K. & Glassett, Farrelly S. (2017). Using Blended teaching to teach blended learning: Lessons learned from preservice teachers in an instructional methods course. *Journal of Online Learning Research*. 3(1). pp5–30. Available at http://www.learntechlib.org/j/JOLR/v/3/n/1/

Shand, K., & Glassett, S., F. (2018). The Art of Blending: Benefits and Challenges of a Blended Course for Preservice Teachers. *Journal of Educators Online*. 15 (1). pp 1-15

Sheridan, L, Gibbons, B., & Price, O. (2019). Achieving WIL placement and theoretical learning concurrently: An online strategy for Higher Education Institutions. *Journal of University Teaching & Learning Practice*. 16(3). Available at:https://ro.uow.edu.au/jutlp/vol16/iss3/8.

Shulamit, K. & Yossi, E. (2017). Development of E-Learning environments combining learning skills and science and technology content for junior high school. *Procedia Social and Behavioral Sciences*. Vol 11. pp. 175-179. www.sciencedirect.com.

Sorensen, C., Gump., A., Heindel, J. A., Caris, M., & Martinez, D., (2011). Overcoming student resistance to group work: Online versus face-to-face. *Internet and Higher Education*. 14. pp. 121- 128.

Sulisworo, D., Agustin, S. P. & Sudarmiyati, E. (2016). Cooperative-Blended Learning Using Moodle as an Open Source Learning Platform. *Int. J. Technology Enhanced Learning*. Vol. 8. No. 2. Pp.187-198.

The Ontario Public Services. (2016). Towards Defining 21st Century Competencies for Ontario. Winter 2016 Edition. http://www.edugains.ca/resources21CL/About21stCentury/21CL21st CenturyCompetencies.pdf.

Vázquez, J. P. G., Vargas, M. A. A., Ezkauriatza, M. G., Juarros, V. I. M., & Doolan, M. A. (2018). Instructional Strategies and Information Technologies Used for Supporting The Undergraduate Mathematics Teaching Process: Scoping Review Protocol. *International Journal of Educational Research*. 90. 27-31.

Washer, P. (2007). Revisiting Key Skills: A Practical Framework for Higher Education. *Journal of Quality in Higher Education.*. 13(1): 57-67.

Zalizan, M. J. & Nurzaini, A. (2005). Generic skills provision in higher education: a Malaysian perspective. *The International Journal of Learning*. Vol 12, No 5, pp. 200–10.