



INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



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To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v8-i7/4342>

DOI: 10.6007/IJARBSS/v8-i7/4342

Received: 24 June 2018, Revised: 22 July 2018, Accepted: 29 July 2018

Published Online: 05 August 2018

In-Text Citation: (Tang, Tan, Rus, Azman, & Hanapi, 2018)

To Cite this Article: Tang, J. R., Tan, E. T., Rus, R. C., Azman, M. N. A., & Hanapi, Z. (2018). Study on the Perception of Lecturers from two Malaysian Universities on Integrated Cumulative Grade Point Average (iCGPA) Assessment. *International Journal of Academic Research in Business and Social Sciences*, 8(7), 300–311.

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Vol. 8, No. 7, July 2018, Pg. 300 - 311

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Study on the Perception of Lecturers from two Malaysian Universities on Integrated Cumulative Grade Point Average (iCGPA) Assessment

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Abstract

Integrated Cumulative Grade Point Average (iCGPA) assessment is introduced in Malaysia in year 2015 as an assessment system to report the students' performance in knowledge together with attributes of ethics, leadership and entrepreneurship. The awareness, opinion, implementation and challenges regarding the iCGPA assessment of the lecturers from two faculties of two Malaysian universities were compared. A questionnaire of 29 items with five-point Likert-scale was developed as an instrument. IBM SPSS Statistics 20 was used for statistical analysis. Cronbach's alpha was used to measure internal consistency. Mann-Whitney U test was performed to compare the differences between two independent groups via comparison of mean ranks. The awareness, opinion and implementation of iCGPA assessment by the lecturers from A University were significantly higher than those of the lecturers from B University, with p-values of 0.003, 0.041 and 0.006, respectively. Lecturers from A University felt that challenges faced by them were greater as compared to the lecturers from B University, but the difference was not statistically significant. Universities could organize workshops to distribute information about iCGPA assessment and arrange strategies to reduce lecturers' worries about the increment of workload resulting from the assessment.

Keywords: Assessment, Education, Holistic, Integrated Cumulative Grade Point Average, University Lecturers

Introduction

Education in the 21st century not only emphasizes achievement in the academic, but also covering a variety of contexts including beliefs, attitudes and value. The key to success in this 21st century and the future employability is to combine both the hard and soft skills to fulfill the specific needs, such as the ability to think deeply about complex problems and apply creative solutions for problem solving (Maureen & Yolanda, 2019). In a recent review on the relation between 21st century skills and digital skills, it is found that 21st century skills are wider than digital skills but they are not

necessarily underpinned by information and communication technology. Seven core skills (i.e., technical, information management, communication, collaboration, creativity, critical thinking and problem solving) and five contextual skills (i.e., ethical awareness, cultural awareness, flexibility, self-direction and lifelong learning) are identified (van Laar, van Deursen, van Dijk, & de Haan, 2017).

Various studies have mentioned the importance of soft skills in higher education institutions, including in Thailand (Tang, 2018) and European countries (here refers to United Kingdom, Austria, Slovenia and Romania) (Andrews & Higson, 2008). In Malaysia, the employment market seeks for competent candidates with soft skills. The Ministry of Higher Education has incorporated soft skills in the programs at universities by embedding them in the course syllabus and extracurricular activities (Mohd Adnan, Daud, Alias, & Razali, 2017). Although a case study in Universiti Malaysia Sabah on the relationship between 200 trainees' soft skill attributes and employment status revealed that there is no significant relationship between the attributes (e.g., technical skills, communication skills, teamwork, leadership, professionalism and ethics) and the employment status (Nazron, Lim, & Nga, 2017), the importance of soft skills is emphasized elsewhere (Shakir, 2009).

The first out of the ten shifts of the Malaysia Education Blueprint 2015-2025 (Higher Education) aims to produce graduates who are holistic, balanced and entrepreneurial. The Malaysia Education Blueprint 2015-2025 (Higher Education) serves as a guide to transform Malaysia's higher education system in order to produce holistic Malaysian youth with necessary values, knowledge and skills to face the challenges in this increasingly competitive and uncertain world. In light of the aim to produce holistic and balanced graduates, an appropriate assessment system is necessary to evaluate the graduates' holistic performance.

Literature Review

The Integrated Cumulative Grade Point Average (iCGPA) assessment (Ministry of Higher Education, 2016) is introduced in 2015 as an assessment system to report the students' learning gains in terms of their ethics together with the functional knowledge and technical abilities (Heng, 2015; Khor, 2015; Tay, 2015). This is in line with the aspiration to produce balanced and holistic graduates equipped with entrepreneurial mindsets. The assessment system could reflect the students' program learning outcome achievement for their entire study period as well as their holistic performance. A student's learning outcome of iCGPA attainment is illustrated in a radar chart known as the "spider web" with the eight Malaysian Qualifications Framework (MQF) Domains. These MQF domains are a) knowledge, b) psychomotor / practical / technical skills, c) social skills and responsibilities, d) values, attitude and professionalism, e) communication, leadership and team working skills, f) problem solving and scientific skills, g) information management skills and lifelong learning and h) managerial and entrepreneurial skills. Five public universities, namely Universiti Kebangsaan Malaysia, Universiti Malaysia Kelantan, Universiti Malaysia Pahang, Universiti Teknologi Mara and Universiti Malaysia Terengganu, became the pioneers to implement the iCGPA assessment in September 2015 (Khor, 2015). All public universities are expected to implement the iCGPA assessment in 2019.

There are nine program learning outcome domains as specified by the Ministry of Higher Education, including a) knowledge, b) practical skills, c) thinking and scientific skills, d) communication skills, e) social skills, teamwork and responsibility, f) values, ethics, morals and professionalism, g) information management and lifelong learning skills, h) managerial and entrepreneurial skills, and i) leadership

skills (Ministry of Education, 2015). The iCGPA assessment appeared to be a comprehensive measure of students' performance (Zubairu, Dauda, Paiko, & Sakariyau, 2017). Findings based on the constructive alignment for Bachelor of Engineering (Hons.) Electrical Engineering program in Universiti Teknologi MARA reported that at least 2.4% of the total core courses should be included in the overall assessment to fulfill the requirement of 5% courses supporting attainment of the nine graduate attributes or learning outcomes (Yusof, Naim, Latip, Aminuddin, & Ya'acob, 2017).

Ismail and Leow mentioned that iCGPA assessment system as an improved assessment system which assessed knowledge together with attributes of ethics, leadership and entrepreneurship should be acknowledged as an effort to ensure the quality of graduates (Ismail & Leow, 2016). A study performed by Mohd Zahari et al. revealed that iCGPA assessment can identify the students' actual ability, knowledge, skills, and attitude. Meanwhile, the assessment helped to improve the students' performances and at the same time assisting the lecturers to diversify the teaching styles (Mohd Zahari, Hanafiah, & Hemdi, 2017).

The iCGPA assessment is an important step in driving the practices of constructive alignment to evaluate the university students' performance as a whole. Since the introduction of the system is quite recent, limited works have been reported. Various factors could contribute to the success as well as the effectiveness of this new assessment system. As the key implementers of the system, lecturers in the universities play the lead roles in ensuring the success of the assessment. Yet, there is inadequate information available about university lecturers' perception with regard to this matter. Related studies mostly reported information or news about the introduction of the iCGPA assessment as well as findings about the practicality of the assessment as a holistic measure. Nonetheless, we believe that the university lecturers' perception directly or indirectly affect the success of the system. Findings from this study provide information about the university lecturers' perception about the iCGPA assessment that would help the policy maker in making decision for further improvement of the system. Furthermore, this study also highlights issues and concerns of university lecturers regarding the implementation of the system.

In this study, the awareness, opinion, implementation and challenges regarding the iCGPA assessment of the lecturers from two Malaysia universities, namely A and B Universities are investigated. University lecturers play a vital role in education (Lam, Hassan, Sulaiman, & Kamarudin, 2018a, 2018b), here particularly the success of the implementation of iCGPA assessment. A questionnaire was developed and distributed to investigate the perception of the lecturers about the iCGPA assessment. This study also investigated if there are significant differences among the lecturers' perception from both the universities. It is hoped that findings of this study will better inform iCGPA assessment design and development towards better implementation of effective assessment practice.

Methodology

A questionnaire consisted of 29 items was developed as an instrument to investigate the awareness, opinion, implementation and challenges in the introduction of the iCGPA assessment system in two public universities in Malaysia (Chantaravisarut et al., 2018; Cramer et al., 2018; Fiene, Ireland, & Brownlow, 2018). The first part retrieves respondents' background information, such as working experience as a university lecturer and highest education qualification. The remaining parts of the

questionnaire require information about the respondent's awareness, opinion, implementation and challenges regarding the implementation of the iCGPA assessment. The number of items is 10, 10, 4 and 5, respectively. The five-point Likert-scale is employed, where the score of 1 represents "Strongly disagree", 2 represents "Disagree", 3 for "Neither disagree nor agree", 4 for "Agree" and score of 5 indicates "Strongly agree".

IBM SPSS Statistics 20 is used for statistical analysis. This study aimed to investigate if there are statistically significant differences in terms of awareness, opinion, implementation and challenges in the implementation of the iCGPA assessment between the lecturers from A Faculty, A University and B Faculty, B University. The respondents' working experience as university lecturer and the highest education qualification are shown in Figures 1 and 2, respectively. In this study, the level of significance, α , is defined as 0.05 (Gréa Krause, Beer-Borst, Sommerhalder, Hayoz, & Abel, 2018; Koyama, Nakagawa, & Tanaka, 2017).

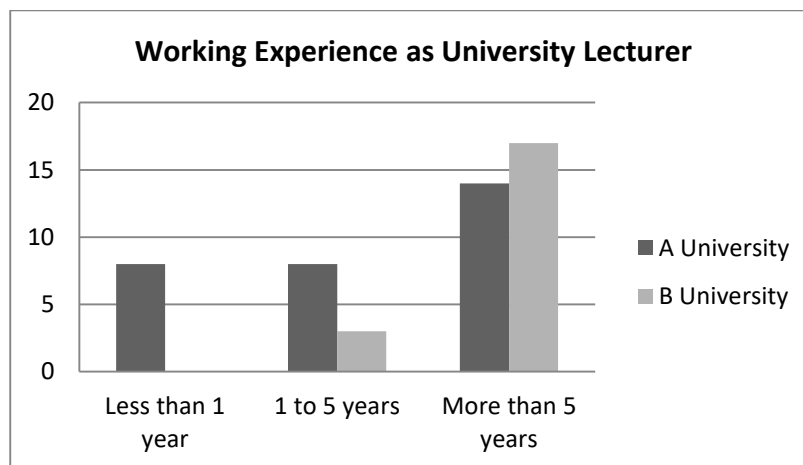


Figure 1. Respondents' working experience as university lecturer.

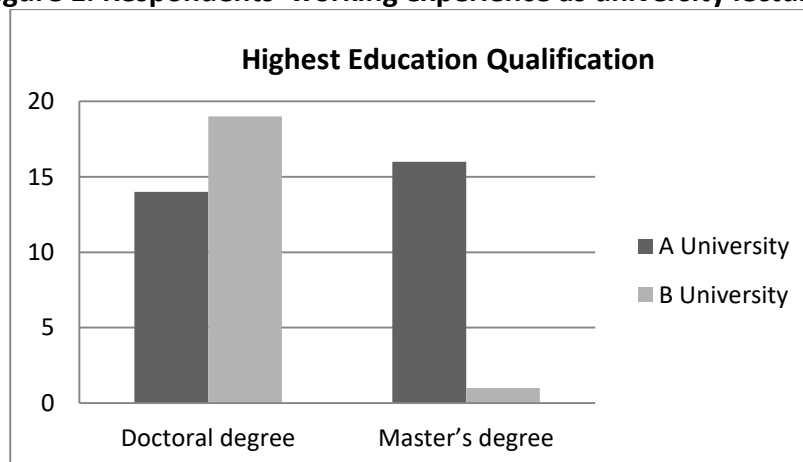


Figure 2. Respondents' highest education qualification.

Result and Discussions

A total of fifty lecturers participated in the survey. Thirty respondents come from A Faculty, A University and the remaining twenty are B Faculty, B University. The lecturers' minimum education qualification from both universities is Master's degree. Most of the respondents are lecturer with

more than five years working experience (i.e., 46.67% for A University and 85% for B University). The overall mean, standard deviation, minimum and maximum of scores for each part is demonstrated in Table 1.

Table 1. Mean, standard deviation, minimum and maximum of overall scores.

Part	Mean	Standard Deviation	Minimum	Maximum
Awareness	4.25	0.72	1.80	5.00
Opinion	4.03	0.62	2.50	5.00
Implementation	3.65	0.69	2.00	5.00
Challenge	3.09	0.76	1.60	5.00

In order to measure the measure of internal consistency, Cronbach's alpha is used and the results are shown in Tables 2 and 3. The Cronbach's alpha is 0.937, which indicates an excellent level of internal consistency for the scale.

Table 2. Statistic of reliability measurement in overall.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
0.937	0.943	29

Table 3. Statistic of reliability measurement for every item.

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item – Total Correlation	Cronbach's Alpha if Item Deleted
Awareness				
A1	108.420	234.657	0.462	0.936
A2	109.100	231.031	0.405	0.937
A3	108.580	230.330	0.535	0.935
A4	108.640	229.500	0.595	0.935
A5	108.600	225.959	0.751	0.933
A6	108.640	225.051	0.732	0.933
A7	108.580	225.310	0.773	0.933
A8	108.620	223.955	0.769	0.933
A9	108.620	225.261	0.739	0.933
A10	108.680	223.691	0.755	0.933
Opinion				
O1	108.680	230.957	0.606	0.935
O2	108.780	229.767	0.650	0.934
O3	108.960	225.672	0.716	0.933
O4	108.860	227.143	0.649	0.934
O5	108.820	232.110	0.588	0.935
O6	108.880	229.822	0.651	0.934
O7	108.820	231.742	0.605	0.935
O8	108.920	227.912	0.665	0.934

O9	109.000	228.980	0.647	0.934
O10	108.940	229.323	0.715	0.934
Implementation				
I1	109.420	229.718	0.444	0.937
I2	109.060	228.180	0.638	0.934
I3	108.780	228.216	0.694	0.934
I4	109.740	228.523	0.50	0.936
Challenges				
C1	109.360	226.562	0.565	0.935
C2	109.920	237.871	0.213	0.940
C3	109.900	235.724	0.260	0.939
C4	109.960	239.509	0.148	0.941
C5	109.920	232.157	0.429	0.937

Mann-Whitney U test is performed to compare the differences between two independent groups via comparison of mean ranks. Here, result of the Mann-Whitney U test is demonstrated in Tables 4 and 5.

Table 4. Rank table of Mann-Whitney U test.

Part	University	N	Mean Rank	Sum of Rank
Awareness	A	30	30.10	903.00
	B	20	18.60	372.00
Opinion	A	30	28.43	853.00
	B	20	21.10	422.00
Implementation	A	30	29.62	888.50
	B	20	19.33	386.50
Challenge	A	30	26.07	782.00
	B	20	24.65	493.00

Table 5. Results of Mann-Whitney U test.

	Awareness	Opinion	Implementation	Challenge
Mann-Whitney U	162.000	212.000	176.500	283.000
Wilcoxon W	372.000	422.000	386.500	493.000
Z	-2.753	-1.748	-2.466	-0.339
Exact Sig. (2-tailed)	0.003	0.041	0.006	0.370

The awareness of the lecturers from A Faculty, A University is significantly higher than those of the lecturers from B Faculty, B University, with p-values of 0.003. The awareness concerns about some details in the iCGPA assessment system, including the range of the achievement scale, the calculation process and also the domains of the MQF. The mean, standard deviation, minimum and maximum of every item in the category of awareness is demonstrated in Table 6. It can be seen that the mean values for all the items obtained by the lecturers from A University are greater than those by B University. Standard deviations of the data are generally large, with the range from 0.568 to 1.231. Although the maximum score for all the items by lecturers from both institutions are the same (i.e.,

5), majority of the minimum scores given by the lecturers from B University are lower. The data are more dispersed especially for items A5 to A10, which are related to the MQF Domains.

Table 6. Mean, standard deviation, minimum and maximum of items under 'Awareness'.

Item	Mean		Standard Deviation		Minimum		Maximum	
	A	B	A	B	A	B	A	B
A1	4.567	4.350	0.568	0.933	3	1	5	5
A2	4.067	3.400	0.907	1.231	2	1	5	5
A3	4.533	4.000	0.900	0.795	1	2	5	5
A4	4.400	4.050	0.968	0.605	1	3	5	5
A5	4.533	3.950	0.730	0.887	3	1	5	5
A6	4.500	3.900	0.777	0.968	3	1	5	5
A7	4.533	4.000	0.730	0.918	3	1	5	5
A8	4.567	3.850	0.728	0.988	3	1	5	5
A9	4.500	3.950	0.777	0.945	3	1	5	5
A10	4.533	3.750	0.730	1.020	3	1	5	5

Regarding the opinion about iCGPA assessment, such as the importance of iCGPA assessment in reflecting the soft skills that are mastered by students, the introduction of the system could enhance curriculum delivery and assessment through constructive alignment, could match the graduates in fulfilling the needs of the industry and could increase the employment rate of graduates, the scores for the opinion of the lecturers from A Faculty, A University are significant higher than scores of the lecturers from B Faculty, B University (i.e., p-value equals 0.041). Based on Table 7 that tabulated the mean, standard deviation, minimum and maximum of items under 'Opinion', the mean values of the items are higher for the lecturers from A Faculty, while the standard deviations appeared to be similar for both institutions, with the range of 0.562 to 0.912.

Table 7. Mean, standard deviation, minimum and maximum of items under 'Opinion'.

Item	Mean		Standard Deviation		Minimum		Maximum	
	A	B	A	B	A	B	A	B
O1	4.333	4.050	0.802	0.686	2	3	5	5
O2	4.200	4.000	0.887	0.562	2	3	5	5
O3	4.133	3.650	0.860	0.875	2	1	5	5
O4	4.133	3.900	0.900	0.912	2	1	5	5
O5	4.133	4.000	0.776	0.649	2	3	5	5
O6	4.033	4.000	0.850	0.649	2	3	5	5
O7	4.167	3.950	0.791	0.605	2	3	5	5
O8	4.133	3.750	0.819	0.851	2	1	5	5
O9	4.033	3.700	0.809	0.801	2	2	5	5
O10	4.133	3.700	0.681	0.733	3	2	5	5

For the implementation of iCGPA assessment, a p-value of 0.006 reveals that there are statistically significant differences in the scores between the lecturers from A Faculty, A University and from B Faculty, B University. Items in this part include knowing the calculation process of iCGPA, whether the iCGPA Rubric Learning Outcomes Assessment Guide is a useful guide and also whether the lecturers receive sufficient information regarding the implementation of iCGPA assessment. Based on the mean, standard deviation, minimum and maximum values of items under 'Implementation' as tabulated in Table 8, similar to the scores in the previous parts (i.e., 'Awareness' and 'Opinion'), lecturers from A Faculty, A University gave higher scores for all the items. Lecturers from both the institutions gave the highest scores for item I3, which indicates that they agreed that to produce holistic, entrepreneurial and well-balanced graduates, it requires transformation and paradigm shift in the form of curriculum design, learning activities and tasks that are used for assessments. There are two items with the standard deviations of the scores greater for the lecturers from A Faculty, A University, which are items I2 and I4, corresponded to the usefulness of iCGPA Rubric Learning Outcomes Assessment Guide and whether the lecturers receive sufficient information regarding the implementation of iCGPA assessment. It can be seen from Table 8 that the standard deviation values for items I1 and I4 are larger as compared to items I2 and I3 for both the institutions, revealing that the responses varied a lot regarding whether the lecturers aware of the calculation process calculation process for a student's iCGPA achievement and also whether they receive sufficient information regarding the implementation of iCGPA assessment.

Table 8. Mean, standard deviation, minimum and maximum of items under 'Implementation'.

Item	Mean		Standard Deviation		Minimum		Maximum	
	A	B	A	B	A	B	A	B
I1	3.600	3.300	0.932	1.302	2	1	5	5
I2	4.100	3.450	0.885	0.686	2	2	5	4
I3	4.367	3.750	0.765	0.716	3	2	5	5
I4	3.333	2.900	1.124	0.912	1	1	5	5

In terms of the challenges in implementing the iCGPA assessment, lecturers from A Faculty, A University felt that challenges faced by them are generally greater as compared to the lecturers from B University, but the difference is not statistically significant (i.e., p-value equals 0.370). The standard deviations for all the items are large, with the highest values of 1.129 and 1.099 for lecturers from A Faculty, A University and B Faculty, B University, respectively. This can be further verified by the large range of the minimum and maximum scores (i.e., mostly from 1 to 5). Items in this part are about the fairness in implementing the iCGPA assessment as well as the increment in workload and difficulty in developing the iCGPA assessment rubric. The mean scores for both the institutions range from 2.700 to 3.733, indicating that the responses varied from 'disagree' to 'agree'. Similar to the previous part (i.e., the 'Implementation'), the standard deviation values are generally large, with a minimum of 0.865. This shows that the responses disperse widely from the minimum score of 1 to the maximum score of 5 frequently.

Table 9. Mean, standard deviation, minimum and maximum of items under 'Challenges'.

Item	Mean		Standard Deviation		Minimum		Maximum	
	A	B	A	B	A	B	A	B
C1	3.733	3.250	1.015	1.070	2	1	5	5
C2	3.000	2.950	0.983	1.099	1	1	5	5
C3	2.967	3.050	1.129	1.050	1	1	5	5
C4	2.800	3.150	1.095	1.040	1	1	5	5
C5	3.167	2.700	0.986	0.865	1	1	5	4

In overall, this study performed Mann-Whitney U test to investigate if there are statistically significant differences in terms of awareness, opinion, implementation and challenges in the implementation of the iCGPA assessment between the lecturers from A Faculty, A University and B Faculty, B University. The internal consistency for the scale is excellent, with the Cronbach's alpha value of 0.937. The mean ranks of the scores for all the four parts are higher for the lecturers from A Faculty, A University as compared to those from the B Faculty, B University. The only part that did not have significant difference between the two faculties is the 'Challenge', with a p-value of 0.370. For the remaining three parts, namely 'Awareness', 'Opinion' and 'Implementation', the p-values are 0.003, 0.041 and 0.006, respectively, indicating that there are statistically significant differences.

The iCGPA assessment as a relatively new assessment system acts as an important step in driving the practices of constructive alignment to evaluate the university students' holistic performance. Nonetheless, some lecturers might not be aware or alert regarding the details of the implementation of iCGPA assessment. The universities could organize workshop to distribute information about iCGPA assessment, especially about the calculation process as well as the development of the iCGPA assessment rubric. Furthermore, lecturers are concern regarding the increment in workload and working time with the implementation of iCGPA assessment. The universities could arrange strategies to reduce worries of lecturers such as providing sufficient time for lecturers to get familiar with the assessment system.

Conclusions

In accordance with the aim of the first shift of the Malaysia Education Blueprint 2015-2025 (Higher Education) to produce graduates who are holistic, balanced and entrepreneurial, the Integrated Cumulative Grade Point Average (iCGPA) assessment was introduced in 2015 as an assessment system to report the students' learning gains in terms of their ethics together with the functional knowledge and technical abilities. In this study, the awareness, opinion, implementation and challenges regarding the iCGPA assessment of the lecturers from A Faculty, A University and B Faculty, B University are investigated. Mann-Whitney U test shows that the mean ranks of the scores for all the four parts are higher for the lecturers from A University. The 'Awareness', 'Opinion' and 'Implementation' parts returned statistically significant differences for the comparison between two universities, with p-values of 0.003, 0.041 and 0.006, respectively. The only part without significant difference is the 'Challenge'. Lecturers are the key agents in ensuring the success of this newly-introduced assessment system. Thus, the universities could organize workshop to distribute information about iCGPA assessment since findings revealed that some lecturers were not highly

aware of the details such as the calculation of iCGPA. Also, strategies could be arranged to reduce worries of lecturers including the increment of workload resulting from the iCGPA assessment. Future work will involve more lecturers from various faculties as well as universities. The suggestions or feedbacks on iCGPA assessment from the lecturers should be taken into consideration for continuous improvement of the iCGPA assessment system. With the necessary precautions, issues arise from this newly introduced assessment system could be minimized and hence ensuring the assessment can achieve the desired outcome as a holistic measurement system.

Funding

This research was funded by the Geran Penyelidikan Khas Universiti Berteraskan Pendidikan 2017 by Universiti Pendidikan Sultan Idris entitled “Kajian Persepsi Pensyarah Fakulti Teknikal dan Vokasional Universiti Pendidikan Sultan Idris terhadap Penilaian Purata Nilai Gred Kumulatif Bersepadu (iCGPA)” with the research code of 2017-0322-107-01.

Acknowledgement

The authors would like to thank all the lecturers from the two faculties in the two Malaysian universities who participated in the survey.

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