The Challenges of Open and Distance Learning in Managing Practicums/Practical Courses during the Covid-19 Pandemic: Universitas Terbuka Case Study

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Abstract

Practicums and practical courses are among the most challenging issues in open and distance learning practices. Various learning strategies have been utilised for these purposes, but they still present substantial problems. During the Covid-19 pandemic, the challenges are even greater as practicums and practical courses have to rely only on independent and online learning. This study aimed to analyse the management of practicums/practical courses during the Covid-19 pandemic based on the evaluation of the practicums/practical courses before said pandemic. The study was conducted using mixed quantitative and qualitative methods, and adopted the Context, Input, Process, Product model for evaluation. Data were collected through interviews, surveys, and observations to evaluate the programme from five Universitas Terbuka Regional Offices involving 100 students and 12 instructors. These data were analysed using a Context, Input, Process, Product educational evaluation model. For policy management of practicums/practical courses during the Covid-19 pandemic, data were derived from a secondary source in the form of the students' registration profiles. Research results indicated that existing policies on practicums/practical courses during the Covid-19 pandemic have been adopted into quality control procedures. Prior to the Covid-19 pandemic, the practicums/practical courses had been conducted in dual modes simultaneously, i.e. face-to-face and online. During the Covid-19 pandemic, practicums/practical courses have to be conducted entirely online due to physical distancing restriction policy. Online practicums/practical courses for diploma and undergraduate students in 2020 generally worked well, although a number of students encountered difficulties. However, the proportion of students who successfully completed the practicums/practical courses online were considerably high at about 90.63% (Semester I) and 97.04% (Semester II).

Keywords: practicums, practical courses, open and distance learning, Context, Input, Process, Product model, Covid-19 pandemic

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Introduction

Open and distance learning (ODL) has been adopted by Universitas Terbuka (UT) for teaching and learning. The ODL system requires students to be independent in using learning materials provided by the university. The main learning materials are generally available in printed and digital formats, while supporting materials are provided in non-printed versions. These materials are based on a range of concepts, basics, and procedures for the students' cognitive and affective enhancement. The students' psychomotor skills are customarily cultivated through practicums/practical courses under the guidance of an instructor.

In the ODL system, cognitive, affective, and psychomotor learning outputs are achieved through a number of learning strategies. To achieve psychomotor learning outputs in particular, UT organises practicums/practical courses for its students. In the 2017-2020 academic years, UT offered 1,096-1,144 courses in diploma and undergraduate programmes. Among the offered courses are 106 practicums/practical courses (Universitas Terbuka, 2018). A practicum/practical course is a class at UT that requires students to learn from hands-on experience, and their learning outputs are measured through performance assessment. As the practicums/practical courses are compulsory, final term grades are not issued to the students until they have completed all of the required tasks in those practical classes. Thus, the practicums/practical courses are an indispensable part of academic study at UT.

During normal circumstances, practicums/practical courses are conducted in dual mode, i.e. either face-to-face or online. However, students predominantly choose the face-to-face mode. Hence, to ensure that the current management of practicums/practical courses complies with national standards, their important components need to be evaluated, covering both internal and external dimensions. The internal dimension consists of related policies, learning materials, and operational standards for organising practicums/practical courses, facilities for practicums/practical courses, and quality control over the operation of practicums/practical courses. The external dimension involves the partners with which UT organises practicums/practical courses and the instructors. The evaluation presented in this research article is intended to offer a number of suggestions to decision-makers concerning the management of practicums/practical courses and their operational quality. It is also expected that the present research could produce several useful recommendations regarding improvements in the provision of practicums/practical courses in future implementation of the ODL system at UT.

The sudden outbreak of the Covid-19 pandemic has forced higher education institutions (including UT) to provide all educational services online. The circular from the Minister of Education and Culture of the Republic of Indonesia No. 4 of 2020 concerning the Implementation of Education Policy in Emergency during Covid-19 Spread (Cabinet Secretariat of The Republic of Indonesia, 2020), explains that the principle applied in the policy is, "The health and safety of students, educators, education staff, families and communities is the top priority in determining the learning policy" (Anugrahana, 2020). Therefore, physical distancing has become a must in learning activities. Practicums/practical activities, which had been predominantly carried out face-to-face, must now be conducted online. In the ODL system, the implementation of online practicums/practical courses is an interesting challenge. One of the challenges is substituting the assisted practicum in a laboratory setting to independent practicum work done at home with online supervision (Wati et al., 2020).

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Research Objectives

The objectives of this study are to: 1) evaluate the implementation of practicums/practical courses prior to the Covid-19 pandemic; and 2) describe the implementation of online practicums/practical courses at UT during the Covid-19 pandemic.

Literature Review

According to the learning taxonomy (Bloom & Krathwohl, 1956) and its suggested modification (Krathwohl, 2002), learning can be classified into cognitive, affective and psychomotor dimensions. Cognitive and affective dimensions are the mental capacity that learning materials can help nurture, whereas the psychomotor dimension is part of the capacity that practicums/practical courses can help develop (Bloom & Krathwohl, 1956; Krathwohl et al., 1964; Krathwohl & Bloom, 2002). In a similar vein but with a different description, learning activities are classified into three domains: cognitive, mental and psychomotor (Marzano & Kendall, 2007). In their elaboration, cognitive and mental (affective) domains are related to what is called declarative knowledge, which refers to learning activities aimed at knowing the "what" of a subject matter. Affective-based learning competencies are generally acquired through critical study, reflection, pondering or contemplation, and socio-drama. Psychomotor competencies, such as those demonstrated in practicums/practical courses, are nurtured through activities related to simulations, practices, demonstrations, and performance assessment (Anderson & Krathwohl, 2001).

Practicum/practice is a form of teaching and learning activity intended to strengthen mastery of applicable material. Practicums/practical activities are often associated with scientific learning activities carried out by students in a laboratory where they are expected to apply the knowledge they have gained during lectures (Wahyuni, 2015). However, there are also practicums/practice activities that aim to deepen the experience of the non-exact sciences, i.e. social sciences and humanities. Usually, practicum in this context is in the form of a study of a phenomenon that occurs in everyday life. There are several practicum/practice purposes, namely to: 1) develop basic skills; 2) develop problem-solving abilities; and 3) increase understanding of learning material (Rahayu & Eliyarti, 2019). Through practicum/practice, a person can comprehensively learn all three competencies, i.e. cognitive, affective, and psychomotor.

Evaluation is a method for measuring programme implementation in order to determine its effectiveness. One model that can be used for programme evaluation is Context, Input, Process, Product (CIPP). The model is generally used in the decision-making process when planning, implementing, and developing a programme (Aziz et al., 2018). An evaluation of the management of practicums/practical courses by means of the CIPP model assesses the whole process in which it undergoes planning, execution, and its delivery as the final product. This model serves as a parameter or point of consideration for policy makers in making a set of decisions regarding the planning, implementation, and improvement of a project or programme (Aziz et al., 2018). The CIPP model here is considered an appropriate choice in carrying out this research because UT has been undertaking some improvements in many aspects of its capacity in organising practicums and practical coursework for its students.

Online learning, as a subset of all distance education, has always been concerned with provision of access to educational experience that is, at the least, more flexible in time and in space than campus-based education (Van, 2005). The quality of online learning is not inferior to face-to-face learning, the only difference is the learning mode. Online learning can be conducted by synchronous and/or asynchronous mode (Belawati et al., 2020). In

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Indonesia, by the end of March 2020, 95% of universities had been conducting learning from home; 98.2% did online learning, while less than 2% did other forms of learning. The advantages of online learning include more documented material, more time efficiency, and students having greater courage to ask questions in a virtual setting (Nizam, 2020).

The Covid-19 pandemic in Indonesia has affected 4,621 universities in various locations throughout Indonesia that serve 8.3 million students (Directorate General of Higher Education, 2020). During the Covid-19 pandemic, students had to fully complete the practicums/practical courses from their homes (Wati et al., 2020) due to physical distancing requirements, through asynchronous or synchronous online modes. Several previous studies explained that students had positive experiences in taking synchronous online learning (Lin & Gao, 2020). This is not easy, because Internet penetration in Indonesia is 62.60% (Belawati et al., 2020). However, digital transformation is a must and requires changes in ways of thinking and culture (Hasibuan, 2020).

Research Method

This research is mainly an evaluative-qualitative research. The evaluation model adopted is the CIPP (Context, Input, Process, Product) educational evaluation model. Developed by Daniel Stufflebeam and his associates in 1968 at Ohio State University (Mbulu, 1995), this model's main function is to support the decision-making process.

The data collected were classified into primary and secondary data. The primary data include respondents' (Table 1) perceptions or opinions regarding the availability of guidelines or handbooks for organising practicums/practical courses, their related policies, and their implementation. The primary data was also obtained from observing the process of conducting practicums/practical courses during the Covid-19 pandemic. The secondary data were collected from the policies of practicums/practical courses, learning materials, operational standards, monitoring results and auditing records of the management of practicums/practical courses, as well as other relevant documents. The indicators of data collection are presented in Table 2.

Data concerning the students' perceptions (before the Covid-19 pandemic) were collected in five Universitas Terbuka Regional Offices (UT-RO), i.e. Medan, Bogor, Yogyakarta, Pontianak, and Makassar. The five UT-RO were chosen as samples to represent three regional zones in Indonesia, namely western, central, and eastern zones. These samples are expected to be sufficiently representative of UT students' background diversity.

Data collection involved the following methods: 1) Documentary Research, used to analyse the contents of the documents that are closely connected with the focus of the research. These documents include policies pertaining to practicums/practical courses, guidelines and instructions for practicums/practical courses, records containing monitoring results on the management of practicums/practical courses, and the corresponding auditing results; 2) Interview, used to acquire or request more information from the respondents regarding the management of practicums/practical courses; 3) Survey with questionnaire, as a technique to collect respondents' perceptions; and 4) Observation, for collecting data in which the researcher acted as a real-time witness to how the practicums/practical courses in UT were conducted.

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Table 1

List of respondents

Respondents	Numbers
Vice Rector for Academic Affairs	1
Vice Rector for Information System and Student Affairs	1
Heads of UT Regional Office (UT-RO)	5
Manager of Learning Support and Learning Material Services	6
Instructors	12
Students	100
Total	125

Table 2

The indicators of data collection

Components	Indicators	Data sources	Data Collection Methods
Context	Evaluation of the management of practicums/practical courses	Monitoring results on the management of practicums/ practical courses	Documentary study
		Auditing results on the management of practicums/ practical courses	Documentary study
Inputs	The availability of practicum instructors	Information from the interviews	Interview
	The adequacy of facilities and equipment	Facilities and equipment	Observation and interview
Processes	The conformity of the conducting of practicums/practical courses procedure with the standards	Implementation of practicums/practical courses procedure	Interview, questionnaire, and observation
Products	Students' capability in performing practicums/ practical course activities	Practicums/practical courses activities	Observation and interview

Data collected from this research were analysed descriptively through the following stages: 1) data reduction; 2) data display in texts, tables, graphs, and charts; and 3) verification, i.e. the re-examination of the conclusions that have been drawn from the results of the research to ensure that they correspond with data from the primary sources. The data obtained from observations during the Covid-19 pandemic were analysed descriptively and further interpreted through the narrative analysis.

Findings and Discussions

Evaluation of the Management of Practicums/Practical Courses during Normal Circumstances

The evaluation of the management processes includes monitoring and evaluation; management audit, availability of practicum support; and adequacy of practicum infrastructures.

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Monitoring and evaluation results

Part of the data used in this research was acquired from the monitoring results at 34 units of UT-RO. Several monitoring and evaluation indicators have been applied across different UT-RO (Table 3). According to the three indicators mentioned, the practicums/practical courses during the specified semester were well-organised, as the levels of conformity or consistency for all indicators were above 80%.

Table 3

Data of monitoring and evaluation on practicums/practical courses

Monitoring and Evaluation Indicators	Consistent		Inconsistent	
	Numbers	%	Numbers	%
Conformity of instructor recruitment to the standardised requirements (e.g. educational background, etc.)	33	97.06	1	2.94
Conformity of the actual operation of practicums/practical courses to the approved guidelines and directions	30	88.26	4	11.74
Conformity of the practicums/practical courses to the set schedule	31	91.18	3	8.82

Based on the data in Table 3, the practicums/practical courses have been conducted in accordance with UT's standard operating procedure (SOP), including the availability of practicum/practice guidelines, instructor recruitment, and scheduling of practicums/practical courses. Practicum/practical course guidelines were made available due to increasing student interest in the practicums/practical courses, and to help students find out how to work and conduct practicums/practical courses (Wahyuni, 2015).

Audit findings

The audit findings on practicums/practical courses at UT are taken as one of the components of evaluation in this research. The audit findings (Table 4) indicated that there are several aspects in organising practicums/practical courses that need to be improved, in particular, the aspect of instructor recruitment, which must be adjusted to their educational background, selection of practicum locations, and on-going monitoring. This is because the spread of practicum locations hinders direct monitoring to be carried out perfectly. The instructors' educational backgrounds influence the validity of the practicum/practice substance. However, UT must continue to improve the suitability of the instructors' educational backgrounds with practicum/practical substances.

Table 4

The audit findings on practicums/practical courses

Aspect	Auditing Findings
Instructors/ supervisors	The selection of instructor candidates has not been properly carried out (including administrative selection). As a result, some of the hired practicum instructors do not meet the qualification criteria, and this inadequacy may compromise the quality of practicums/practical courses and the students' satisfaction.
Management of practicums/ practical courses	The main issue is that practicum planning, monitoring, and evaluation procedures in Semester 2016/17.2 have not fully conformed with the operational standards for the following reasons: a) There has not been proper selection of locations for practicums. Consequently, the available practicum sites for UT students cannot be expected to be up to standard.

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Aspect	Auditing Findings
	b) There has not been proper monitoring on the running of practicum activities.
Monitoring and evaluation	There are some monitoring and evaluation components that have not been performed yet. Monitoring reports on practicums/practical courses have not been made available.

The availability of practicum instructors

To provide students with instructors for practicums/practical courses, whose responsibility is to provide on-site supervision, UT generally engages academics and/or practitioners of other educational institutions with whom UT has built partnerships. They are selected through open recruitment (as that for tutor recruitment) and processed according to standardised procedure. Instructors have been made available for all of the offered practicum/practical-supported courses in all of the UT-RO. In evaluating their performance, a survey involving students has collected the relevant information at a number of practicum sites. The data of practicum instructors' performances collected from 100 students enrolling in practicums/practical courses classes in five units of UT-RO are included in Table 5.

Table 5

Data analysis of practicum instructors' performances

Performance Indicators	Yes		No		Total
	Numbers	%	Numbers	%	
The instructor is always available at the practicum site on the scheduled meetings.	181	90.50	19	9.50	200 (100%)
A substitute is available when the instructor in charge of the practicum cannot be present.	113	56.50	87	43.50	200 (100%)
A rescheduling is arranged for the practicum meeting that is cancelled because of the instructor's absence.	116	58.00	84	42.00	200 (100%)

Adequacy of facilities and equipment

Adequate facilities and equipment are undoubtedly necessary for successful organisation of practicums/practical courses. This aspect of physical support is particularly crucial for practicums/practical courses organised at UT (i.e., on-site classes). The survey on this subject, in which students were the respondents, has revealed that ≥89.00% of the respondents perceived the practicum facilities and equipment in their campuses were adequate (Table 6).

Table 6

Respondents' perception regarding the adequacy of practicum facilities and equipment

Indicators	Yes		No		Total
	Numbers	%	Numbers	%	
The practicum site is easily accessed.	181	90.50	19	9.50	200 (100%)
Facilities for eating and daily prayers are available.	181	90.50	19	9.50	200 (100%)
Classroom lighting is adequate.	179	89.00	21	11.00	200 (100%)
Learning equipment in the classroom is sufficiently available.	180	90.00	20	10.00	200 (100%)

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The results of the overall evaluation of practicums/practical courses in normal circumstances (before Covid-19) indicated that the implementation of practicums/practical courses still had several weaknesses. It is not easy to control the implementation of face-to-face sessions because the students' locations are quite spread out. One such difficult aspect is the rescheduling of practicums/practical courses due to the instructor's absence. Therefore, UT requires an easier method to control the conduct of practicums/practical courses. One potential method for this is online guidance.

Management of Practicums/Practical Courses During the Covid-19 Pandemic

The sudden outbreak of the Covid-19 pandemic has shocked all parties, including those in education. The demands for change are unavoidable. Following up on the circular from the Minister of Education and Culture No. 4 of 2020, the UT Chancellor released a policy to regulate education services during the Covid-19 pandemic. This policy is contained in the Rector's Regulation No. 326 of 2020 concerning the Academic Policy of UT in the Prevention Period of the Spread of Covid-19 in 2020 and the Chancellor's Regulation No. 721 of 2020 concerning UT Education Service Policy Services in the Covid-19 Pandemic Situation. In the Chancellor's two statements, it is explained that UT education services were to be carried out online, including tutorials, practicum/practical courses, and final semester exams. Thus, UT made efforts to change practicum/practical activities for students who initially chose face-to-face mode to online mode. This is a challenge given that survey results from Belawati et al. (2020) regarding the online learning experience before the Covid-19 pandemic revealed that only 63% of UT student respondents admitted to having experienced online learning, while the other 37% had never done so.

In 2020, UT carried out all practicum/practical activities in online mode (synchronous and asynchronous) and in several forms: 1) online practicum/practice and asynchronous online mentoring; 2) on-site practicum/practice and mentoring carried out online asynchronously through e-learning (Moodle); 3) on-site practicum/practice and mentoring carried out synchronously online through webinars. The provision of these services is based on the characteristics of each course. For example, accounting sessions could be carried out via asynchronous online activities and asynchronous online mentoring, while biology practicums had to be conducted on-site with online mentoring. These three methods are commonly used by ODL institutions in implementing tutorials (Shoepe et al., 2020), including in UT. However, practicum/practice in the online mode was only an option before the Covid-19 pandemic. Synchronous online practicum/practice mentoring was a new experience for UT, although several previous studies have explained that students have had positive experiences in conducting synchronous online learning (Lin & Gao, 2020). In fact, virtual reality (VR) simulation is a viable option for conducting practicums/practical courses in an off-site mode during the Covid-19 pandemic (Sasaki et al., 2020), but VR is currently under development in UT.

In first semester of 2020, 132,139 student-courses (total students who take practice/practicum for all practical/practicum courses) participated in the practicums/practical courses and 154,596 student-courses (total students who take practice/practicum for all practical/practicum courses) in the second semester (Table 7). The biggest challenge in implementing online practicum/practice at UT is the uneven Internet network in each region. UT has 40 UT-RO that are spread across regions with different levels of Internet accessibility. Overall, Internet penetration in Indonesia is only 62.60% (Belawati et al., 2020), which affects the level of Internet access of UT students. With regards to Internet penetration issues, it is definitely not easy for UT students to completely switch to online mode. In addition, the level of Internet literacy among students and instructors also varies. Initial training for students and teacher education for instructors are required. (Sasaki et al., 2020).

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Table 7

Statistics of students taking practicums/practical courses in 2020

Aspects	Semester I	Semester II
Total number of registered students for all courses	290,648	311,028
Total number of courses for diploma and undergraduate programmes	1,158	1,144
Total number of practicums/practical courses for diploma and undergraduate programmes	106	106
Total number of registered students for practicums/practical courses	132,139[*]	154,596[*]
Total number of students who successfully carried out online practicum/practice	119,751	150,022

Note: * Number of students who registered for practical/practicum courses

The online practicums/practical courses for diploma and undergraduate students in 2020 generally ran smoothly, although not all students could complete them. Students who successfully carried out online practicum/practice are 90.63% (Semester I) and 97.04% (Semester II). At the beginning of its implementation in Semester I, UT received complaints from students and instructors who experienced synchronous online practicum/practice, such as that the Internet network was inadequate, students did not have a mobile phone or laptop, and that they required additional funds for Internet access. This was also reported in universities or other educational institutions across Indonesia (Anugrahana, 2020; Hasibuan, 2020).

In Semester II, UT continued to motivate students and instructors to continue carrying out online practicum/practice as it was an important part of learning (Li & Keller, 2018). Furthermore, complaints began to decrease, and students' participation increased to 97.04%. Meanwhile, for online practicum/practice combined with asynchronous online mentoring, there were relatively no complaints because students are used to this mode. Two advantages of asynchronous online learning are self-controlled learning and self-directed learning (Lin & Gao, 2020). UT conducted online practicum/practice for 150,022 students (Table 7) in Semester II through two modes, i.e. asynchronous and synchronous. The number of students who participated in synchronous online practicum/practice was higher than those in the asynchronous mode (Table 8). Students who went through online practicum/practice, submitted their reports and received scores were 79.08% (asynchronous mode) and 93.55% (synchronous mode), as presented in Table 8. Thus, the average percentage of students who successfully went through online practicum/practice in Semester II of 2020 was 92.08%.
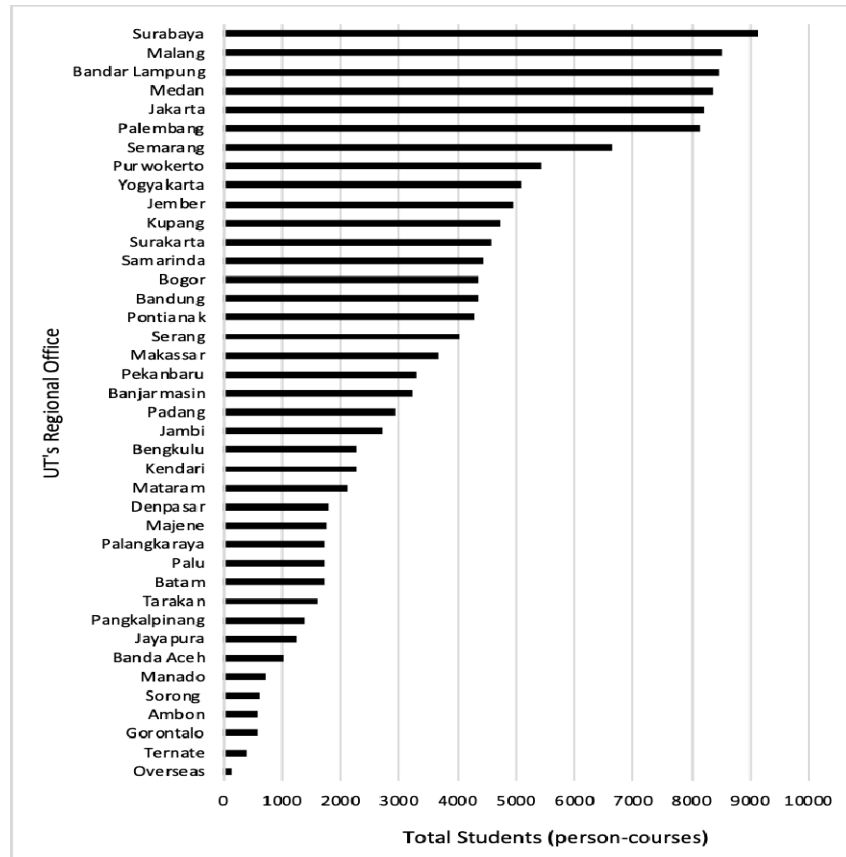
Table 8

Percentage of students who submitted practicum/practice reports and obtained scores

Aspects	Online practicum/practice (asynchronous)	Online practicum/practice (synchronous)
Total number of students who successfully went through online practicum/practice (person-courses)	15,271	134,751
Total number of students who submitted reports and obtained scores (person-courses)	12,076	126,056
Percentage (%)	79.08	93.55

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Figure 1

Distribution of student data registered in practicums/practical courses at 40 UT-RO

Of the 40 UT-RO (Figure 1), the Surabaya office had the highest number of students registered in practicums/practical courses (9,148 people), and the overseas office had the least number of students (141 people). Of these, not all were able to smoothly go through online practicum/practice, with some students requesting face-to-face practicum/practice due to the difficulty in accessing the Internet.

Conclusion

The overall evaluation of practicums/practical courses prior to the Covid-19 pandemic indicated that the implementation of these courses still has a number of weaknesses, including tutor supervision during on-site sessions and the arranged practicum schedule with other stakeholders. Some of the hired practicum instructors do not meet qualification criteria, and some practical courses have not been equipped with sufficient instructions for accompanying practicums/practical courses. About 43.5% of the respondents informed that they faced difficulties in finding substitute instructors when the original instructors are absent. Related with some of the audit findings, some aspect of the practicum/practice implementation must be improved so that students can achieve the expected competencies. Sudden changes in the practicum schedule occur quite often, resulting in difficulty to bring together students, tutors, supervisors and practicum assistants. This requires greater temporal flexibility to adapt to the existing condition. In contrast, the online practicum/practice for diploma and undergraduate students in 2020 during the Covid-19

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pandemic generally worked well. However, a number of students encountered difficulties due to limited Internet access. The success rate of those students is also considerably high (90.63% in Semester I, and 97.04% in Semester II). The online practicum and practical components are still limited to independent practicum that can be conducted without laboratory work. This research has not conducted a survey of students on online practicum/practice. Thus, it is suggested that further research should conduct this survey. In terms of management, continuous support from all parties is crucial to achieve better implementation of practicums/practical courses at UT.

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