

# Changes in the assessment of work-integrated learning in Botswana for vocational education and training students as a result of the COVID-19 pandemic

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The COVID-19 pandemic disrupted the continuity to Technical Vocational Education and Training (TVET) activities and work-integrated learning (WIL) assessments, thereby negatively affecting the progression of studies for many learners. Several institutions revisited their assessment methods and tools for WIL during such pandemics. This study investigated the assessment methods adopted by private TVET institutions in Botswana to assess WIL during the pandemic. This was a quantitative study which used online questionnaires to gather data. Purposive sampling was used to select research participants, amongst TVET lecturers and WIL coordinators in two private TVET colleges. Findings indicated that assessment of WIL practical skills online remains a challenge and most of the institutions attempted to continue with usual assessment practices.

Keywords: Work-based learning, assessment, assessor, workplace, competence

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The COVID-19 pandemic that swept the world and Botswana, caused disruptions in education in general and to Technical Vocational Education and Training (TVET) training and work-integrated learning (WIL) assessment activities in particular (International Labour Organization, [ILO], 2021). The Government of Botswana implemented a country-wide lockdown on March 30<sup>th</sup>, 2020 to try and avert the spread of the COVID-19 pandemic. Indefinite lockdown extensions continued after the expiry of the first lockdown on 22<sup>nd</sup> of May 2020. Schools, colleges and all non-essential workplaces were closed for business and this, in turn, affected the continuity of WIL activities. There was confusion as to the best way forward for learners as Botswana spent the greater part of 2020 under lockdown with schools and colleges closed. Several TVET programmes such as apprenticeships and traineeships that involve a combination of classroom and WIL, or wholly on-the-job learning were not spared. These programmes involve WIL of varying duration, for example on a weekly, monthly, or yearly basis (European Commission (EC), 2013). As a result of the pandemic, most theory lessons and assessments were delivered online, however, practical competencies related to WIL must be carried out in the workplace and assessed on the job, and this necessitated the adoption of new WIL assessment strategies. Even though the pandemic has created several opportunities to adopt new pedagogical methodologies based on digital technologies, its impact on the assessment of practical skills online remains a challenge. Hence, this study investigated and examined WIL assessment tools and procedures adopted by TVET institutions in Botswana during the COVID-19 pandemic.

To comply with COVID-19 protocols such as social distancing, learning institutions were challenged to revamp their WIL assessment tools and procedures during the pandemic (World Bank, 2020). The ILO–UNESCO–World Bank (2021) joint survey findings indicated that 75% of respondents reported there were cancellations or postponement of examinations and other forms of assessments due to the

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pandemic. It has been reported that the pandemic has more significant impact on the outcomes for learners in low-income countries due to limited digital technologies in learning institutions and companies, couple with limited skills among teachers and students (Hondonga et al., 2021).

Prior to the pandemic, students undertaking WIL were assessed in-person by institutional assessors. With the advent of COVID-19, TVET institutions had to rapidly create innovative ways of conducting WIL assessments to meet learning schedules in an era when most of the communication and transfer of information has become paperless (Zegwaard & Rowe, 2019). Hence, this study examined assessment tools and procedures for WIL implemented by private TVET institutions in Botswana during the pandemic times. The study sought to answer the questions:

1. What assessment tools and procedures were adopted to assess WIL during the COVID-19 pandemic in Botswana?
2. What were the challenges for WIL assessment during the COVID-19 pandemic in Botswana?
3. What resources were required to conduct online WIL assessments?

#### TRANSFORMATIVE LEARNING THEORY

This study was guided by the transformative learning theory that focuses on producing enlightened agents of change empowered with decision making skills (Mezirow, 2003, p.58-9). The transformative learning theory is used in adult education and applies particularly in the context of post-secondary education. The theory is viewed partly as a development process theory since transformation starts from a point of discomfort to guide action to a revised standpoint. Transformation occurs because of acute personal or social crisis, for example, the disruption that occurs as a result of a pandemic. When there are experiences that are stressful, painful and threaten the very core of people's existence, people would rely on acquired knowledge, technologies, and skills for survival (Mezirow, 2003). Based on the theory, the study examined the transformation of assessment innovations pursued by TVET institutions based on information technology tools to assess WIL which has been disrupted by COVID-19. Since transformative learning liberates and empowers people to question the existing situation, transformative learning enables people to take decisions. The study examined new assessment methods which were adopted to achieve work-based assessments during the COVID-19 pandemic.

#### LITERATURE REVIEW

##### *Work-Integrated Learning*

Work-integrated learning (WIL) is that learning which happens in a real working environment producing real objects and delivering services (UNESCO, 2018). WIL is recognized as an effective strategy to promote the quality and relevance of vocational education and training (Bahl & Dietzen, 2019, p.3). WIL has a dual function to meet the learning needs of the employees and trainees; developing their knowledge, skills, and professional behavior and meeting the workforce development needs of the organization (Hondonga & Chinengundu, 2020). Therefore, WIL may include learning undertaken as part of workforce development. TVET learners taking part in WIL are expected to acquire main job competencies, soft interpersonal skills, and work ethics over time through doing, observation and job shadowing experts in the real workplace (Akoojee & McGrath, 2006; Dean & Campbell, 2020). On one hand, the importance of WIL is in providing workplace related learning and producing job-ready graduates, avoiding mismatch of graduate skills and those needed for work (Mabhandu, 2016). On the other hand, learning on the job is meant to increase the employability of graduates on completion of training as they would develop hands-on experience. The exposure to

relevant practical work during WIL affords learners work experience which cannot be gained through purely school-based vocational education training (VET) (Rayner & Papakonstantinou, 2015). Rowe et al. (2012) point out that WIL activity has extended beyond limited conceptions such as describing placements, to include a range of non-placement WIL such as simulated, virtual, authentic and industry-based activities. Non-placement WIL also includes project work with external companies, where the work occurs on campus (Dean et al., 2020). Since WIL contributes to a qualification, it must be structured with defined durations and assessments.

#### *TVET Programs and Work-Integrated Learning in Botswana*

In Botswana, several skill development models are in place, and they all have emphasis on WIL enabling learners to acquire the necessary competencies needed for work. For instance, the Brigades system of education and training which commenced in 1963 has an underlying philosophy of Education with Production (EWP) and emphasizes that learners should acquire skills on the job (Akoojee & McGrath, 2006, p. 53). EWP was meant to integrate the component of education with production and skills acquisition, balanced with academic education, putting emphasis on learning by doing to integrate theory and practice, between subjects. The main subjects that dominated in the Brigades system in 1970s and early 1980s were auto mechanics, electrical, forestry, welding, construction, horticulture, sewing and livestock rearing (Van Rensburg, 2002, as cited in Akoojee & McGrath, 2006, p. 53). Brigades also encourage entrepreneurship amongst the graduates and in their communities by allowing them to rent workshops and equipment, and by providing business advisory and accounting services. The curriculum operates with an allocation 70% practical work and production and 30% theory work in the institutions. When the Brigades system was introduced, learners were not participating in WIL outside the institutions' production units. However, with the change of the system, learners can now participate in WIL in other companies and organizations. It is argued, however, that the current Brigade education system is no longer robust compared to its initial years, due to the collapse of production units in favor of WIL in other organizations, which is often abused by both trainees and employers (Akoojee & McGrath, 2006, p.53). Standards of education and assessment cannot be systematically enforced when students are on WIL in organizations outside the brigades. In a review of Botswana's TVET curriculum by the Department of Vocational and Technical Education and Training, (DTVET) in 2001, an argument was put forward that the original Brigades concept has outlived the aim of providing skills for a less developed community than now exists (Hammink et al., 2015, pp. 6-16). Kologwe (2016) found that there is shortage of adequately qualified TVET trainers in specialized areas, leading to most institutions running under capacity while at the same time lowering education standards and graduate skills.

Apprenticeship programmes in Botswana have alternating institutional and WIL. Currently, apprenticeship in Botswana follows a 3-3-6 model of initial three months institutional theory learning followed by three months of practicals in the institutional workshops Curriculum Based Modular Training [CBMT]), and then six months of WIL in companies. The education structure repeats itself from first to fourth year. All other TVET programmes in the country have varying durations of work placement.

Although the Botswana Qualifications Authority (BQA), the regulatory body in the country, emphasizes the inclusion of WIL in all new learning programmes being registered from 2021, it allows institutions to be flexible on the WIL durations. For instance, in one private TVET college WIL is now mandatory for all programmes on a 6 months duration, with mandatory assessments, number of credits and a separate award for completing the WIL.

## POLICY FRAMEWORK AND LEGISLATION FOR WORK-INTEGRATED LEARNING

Policy and legislation are important in order to formalize and regulate WIL and to make it an integral part of the skilled human resource development of a country. Okorafor & Nnajofofor (2017) noted that in most developing countries, TVET policies are in draft form. Major policies that shaped the TVET policy in Botswana are the Revised National Policy on Education (RNPE) 1994, the National Policy on Vocational Education and Training (NPVET) 1997 and the Vocational Training Act (VTA) 1998 (Government of Botswana, 1994; UNESCO, 2018). The Human Resources Development Council (HRDC) in Botswana coordinates WIL; it also promotes WIL by reimbursing employers who incur the costs of enabling the learning of apprentices or their own employees. However, while WIL in Botswana is not examinable in all TVET programmes, it adds value to the learner by equipping them with necessary skills for work and by improving graduates' employability. Hence it is a common component in several TVET programmes.

## FINANCING OF WORK-INTEGRATED LEARNING

Funding for WIL in Botswana is mainly government driven and augmented by a levy system (Bothale, 2019). The amount of the levy paid by companies in Botswana is based on annual turnover, and the fund is entirely managed by the Human Resources Development Council (HRDC, 2017). The levy was introduced in 2014 and is collected by Botswana Unified Revenue Services (BURS) who in turn forward it to HRDC. Company levies are used to fund WIL activities such as paying students work-placement allowances and buying tool kits and for big machinery for learning institutions.

## WORK-INTEGRATED LEARNING ASSESSMENT

Assessment of TVET students during their WIL is done either in a workplace setting or it may require the student to be on campus for assessment (York & Vidovich, 2014). Non-placement WIL which provides an alternative experiential learning model on campus, allows trainees to engage in authentic experiences that integrate theory with practices and notions of work, may also need an alternative assessment (Dean et al., 2020). An example of non-placement WIL includes situations whereby students can be involved in maintenance work and production units in related trades in the institution. As such, tools and methods used for WIL assessment can be defined by *what is to be assessed*, whether application of content learnt, the process of learning or both. A range of different methods can be used to assess achievement in WIL, as set out in Table 1.

TABLE 1: Methods of Work-integrated learning assessment.

Assessment method	Description and Application
Ungraded self-assessment	Formative rather than summative. Trainees capture their daily/weekly operations to reflect what they learnt and comment on how well they performed the tasks.
Assignments and projects	Any task must be directly linked to the learner's work content and context and, as with all assessment, include clear criteria. Learners can have prepared tasks that must be performed in the workplace.
Reports:	These can relate to distinct aspects of the WIL and can be designed to develop the skills of writing as well as measure the veracity of the content.
Portfolios	Portfolio assessment comprises a focused collection of work and can be used to achieve two distinct purposes: a developmental portfolio if organized to show student learning or a showcase portfolio if based on samples of a student's best work. Ideally the student will be involved both in selecting the work and deciding the criteria that are used to judge the work. In addition, the portfolio should include evidence of student self-reflection on the content and process. Race (2009) provides advice on the use and assessment of portfolios: <ul style="list-style-type: none"> <li>• specify or negotiate intended learning outcomes clearly</li> <li>• propose a general format for the portfolio</li> <li>• specify or negotiate the nature of the evidence which students should collect</li> </ul>
Oral presentations	The use of oral presentations at the end of the WIL allows the learner to demonstrate communication skills as well as presenting their findings and understanding of a project or tasks performed during the WIL.
Logbooks, learning journal learning log	Logbooks should be developed by both institutional instructors and work-based supervisors to guide assessment of WIL. Assessment criteria should cover both occupation-specific technical, generic, and transferable skills that support occupational mobility and career development. Such logbooks must be kept and maintained by trainees as they are used to note down the tasks they have performed and record key stages of achievement for assessments (ILO, 2020a. For instance, British Columbia uses mobile logbooks (also called Skills Record) which allows for peer learning from logbooks over and above the recording of tasks performed by learners.

Although several institutions in Botswana have made WIL compulsory in their learning programmes, WIL has not been examined, nor does it appear on students' transcripts. Due the value of skills gained during WIL, colleges do visit students on WIL assess them. A certificate of WIL completion is issued in some colleges. However, based on the WIL policy of one private TVET institution, total WIL

completion has a number of assessment requirements. These are logbook (15%), assessment by industry supervisors (60%), an attachment presentation (10%), and an attachment report (15%). All the assessments must be in place for a student to complete WIL. These different assessments are accommodative to unforeseen circumstances such as the COVID-19 pandemic which may disrupt other assessments. If there happens to be disruptions to other assessments, and based on the institution's WIL policy, decisions on whether completion or non-completion of WIL can be made is based on those assessments performed. The inclusion of workplace supervisors, college supervisors and learner self-assessments gives responsibility to all parties in the learning agenda. This is transition from the forms of assessments dominated by institutional assessors arguably considered limited especially in a digitalized, democratic era characterized by learner-centered approaches of both learning and assessment (Bernhard & Camins, 2021). In some cases, assessment of WIL is also done online.

#### *Online Assessment of Work-Based Learning*

The availability of digital technologies has enabled learning and assessment to be done from more than one venue and using more than method. TVET by its nature can also be assessed from different venues: the school for theoretical assessment and the workplace for practical assessments. The institution must properly coordinate all points of assessment until the certification of the learner. This entails either giving the role of assessing work-based learners to experts based in the workplaces, or to use online assessment methods. For example, this assessment responsibility could be assigned to the immediate supervisors of work-based learners, who could assess and in turn transmit, the assessment decisions to the institution through computer based platforms (Hartel, 2017; York & Vidovich, 2014). Proponents of online WIL assessments like Hartel (2017) point out that in-company trainers are ideal persons to be engaged in assessing practical activities in the workplace since assessments can be arranged within the normal working routines of the company. This arrangement offers a great deal of flexibility and may be adapted to suit local company arrangements of infrastructure, work arrangements and learner assessment readiness (ILO, 2020b). Involving industry experts as assessors can help to ensure the credibility of the certification. In any case, hosts of learners on WIL are also important assessment stakeholders of the skills development agenda in TVET. A better understanding of innovative tools and procedures to utilise online assessments for trainees on WIL would help to improve efficiency on assessment procedures.

#### QUALITY ASSURANCE OF WORK-INTEGRATED LEARNING

The quality of WIL and assessment must be maintained despite the abrupt changes that COVID-19 forced upon the TVET sector. This quality assurance entails not deviating from policies and processes put in place to ensure adherence, sustainability and enhancement of quality and competitiveness in the provision of vocational skills development during WIL, to meet international expectations (Barabasch, 2017; BQA, 2020a). This includes documenting any changes to policies and procedures of registration and accreditation of learning institutions, companies who want to host trainees, workplaces, programs, assessors and moderators, and assessment processes up to certification of successful learners. Quality assurance processes are done to ensure quality education standards and protection of learners (Rayner & Papakonstantinou, 2015). For example, company accreditation is important as a quality assurance process to enhance the effectiveness of WIL. This accreditation of companies is done to ensure that companies demonstrate that they will be able to host and supervise WIL learners without compromise, even during the pandemic times, and supply highly skilled, knowledgeable, and competent graduates (Barabasch, 2017; EC, 2013). The employer must confirm that they can host the learners in terms of health and safety, availability of equipment and experienced workers, education structures and policies

in place to sustain such intentions of skills development. Barabasch (2017) emphasizes that quality assurance can be achieved and sustained by: developing and applying quality standards, developing and applying procedures for quality assessments, developing procedures to implement quality standards and recommendations, and monitoring quality improvement progress. It is important, therefore, to have quality assurance processes to effectively support WIL assessment even during the pandemic.

#### EFFECTS OF COVID-19 ON ASSESSMENT OF WORK-INTEGRATED LEARNING IN BOTSWANA

The COVID-19 pandemic prompted the need to reduce the physical presence of many people from workplaces and additionally, students and learners were prohibited from many workplaces. This threatened the formative assessment that needs to be carried out to check students' progress whilst they are on WIL. For instance the joint ILO-UNESCO-World Bank survey (2021) found that in some countries, work placements were cancelled, rescheduled, or postponed due to the pandemic. For example, in Armenia, Australia, Austria, Finland and New Zealand, some workplaces not affected by COVID-19 remained open and trainees could continue with WIL tasks (ILO et al., 2021). Whilst trainees could continue with working and learning in the workplaces under strict health restrictions, their competence and skills development still needed to be assessed to meet course requirements.

In countries like Botswana, college-based assessors were not able to travel across the country to visit companies, due to inter-zonal travelling restrictions imposed during the pandemic to reduce the spread of COVID-19 (BQA, 2020b). This scenario prompted learning institutions to adopt novel, but flexible, inclusive, and sustainable assessment options dictated by the prevailing situation and country level COVID-19 protocols, as the crisis unfolded, together with an urgent need for improved resources to meet new assessment methods. Therefore, this study examined assessment tools and procedures for WIL assessment implemented by TVET institutions in Botswana during the pandemic.

Young people were particularly affected, especially those who were learning jobs or those who were about to enter the labour market. Several trainees did not move into employment but, rather, delayed their entry into it, due to disruptions to TVET assessment and learning activities, highlighting the all too real risk of a lost generation (ILO, 2020b). Although over two-thirds of learning is now being provided via distance learning, often online, few low-income countries have actually made that transition (Hodges & Martin, 2020). A better understanding of innovative tools and procedures to assess WIL during the COVID-19 pandemic will help to inform policy makers concerning assessment procedures, to improve the recovery of TVET during and post the COVID-19 pandemic.

#### ROLE OF ICT IN WORK-INTEGRATED LEARNING ASSESSMENT

The investment in information and communication technology (ICT) and its utilisation in WIL assessment systems came under scrutiny when assessment methodologies needed to be changed with the onset of the COVID-19 pandemic in Botswana. BQA (2020b) reported that although institutions and companies had their own ICT infrastructure, this was not utilised for WIL assessments in Botswana before the pandemic. In some countries, for instance, ICT platforms allow for the transmittance of assessments before and after they have been administered (Reaves, 2019). Digital innovations based on ICT enable new forms of teaching and learning, including assessment methods, to be done online (Lipinge et al., 2020). Therefore, education systems must utilise ICT technologies in both teaching and assessment processes. ICT tools can be used to allow for communication between the learning institution and workplace learning venues in real time (Rajab et al., 2020). This study determined the utilisation of ICT in WIL assessments.

ICT helps to improve online assessment and the transfer of information between learning institutions and WIL venues (Alanson et al., 2020). Where assessment needs to be conducted at the two venues, there is a need for effective communication and close cooperation between the enterprise and the TVET institution, as well as a detailed feedback and evaluation mechanism for assessment of WIL (ILO, 2020b). However, this calls for coordinated synergies for the smooth running of the assessment process. Questions would be raised as to whether all companies hosting students on WIL have the ICT infrastructure to facilitate online assessments? Do companies have dedicated people to support trainees? Are company work-based assessors trained and accredited to carry out WIL assessments?

## METHODOLOGY

This study used a quantitative research design to gather data using an online questionnaire. The questionnaire comprised of both open and closed ended questions. The 28 questions in the questionnaire related to the assessment tools and procedures which were adopted to assess WIL during the COVID-19 pandemic in Botswana, the challenges for WIL assessment during the pandemic, and the adequacy of resources needed to conduct online WIL assessments. Due to the COVID-19 pandemic, the questionnaires were completed online via Google Forms. Respondents were actively selected from TVET lecturers and WIL coordinators from two private TVET colleges in Botswana offering engineering programmes. These respondents were selected as they would provide insights on WIL assessment as they were directly involved in assessing TVET trainees even during the COVID-19 pandemic. The two colleges were selected because they are well established with good learning reputations and many programmes on offer which include a WIL component. Their trend setting in the country further justified their selection for the study.

Permission to conduct the study was granted by the Ministry of Tertiary Education, Research, Science and Technology. The research permit was used to seek permission from each college's management to distribute questionnaires to respondents. The consent of respondents to participate in the study was sought at the commencement of the online questionnaire, with the purpose and significance of the study explained to respondents at the top of the questionnaire. All respondents were assured that their responses would be kept confidential and used only for the purpose of this study (Bryman & Bell, 2007). Descriptive statistics were used to present research results using quantitative analysis and descriptions for clarification. Responses to open-ended questions were thematically analysed.

## FINDINGS

The total number of respondents from the two colleges who completed the questionnaire was 27 out of the 50 who were sent the questionnaire via email (a 54% response rate). The respondents of this study were 21 TVET lecturers, four workplace coordinators and two WIL assessors.

From the survey, it was established that all the programmes in the private colleges had a WIL component, with 96% of programs having mandatory WIL placement/s. As shown in Table 2, 20 respondents (74%) indicated that they were trained and registered assessors with the Botswana Qualifications Authority (BQA), while 7 assessors (26%) were conducting assessment although they were not trained, but some of them were registered by BQA. However, 7 assessors (26%) were not registered with BQA but were conducting assessments. The assessors' work experience ranged from five years, (n=13, (48%) to over twenty years (n=2, (8%).



TABLE 2: Assessor training, accreditation and experience.

	Frequency	Percentage
<b>Training</b>		
Trained assessors	20	74
Not trained	7	26
<b>Registration with Botswana Qualifications Authority</b>		
Registered with BQA	20	74
Not registered	7	26
<b>Experience of Assessors</b>		
0-5 years	13	48
6-10 years	9	33
11–15 years	3	11
16-20 years	0	0
Above 20 years	2	8

*Pre-Pandemic*

Table 3 presents the methods used by the institution to assess WIL pre-pandemic. Most WIL assessments pre-pandemic (14, 52%) were via observations of trainees in the workplaces by work-based assessors. Other ways of assessing WIL also normally used by the institutions were observations of trainees in the workplace by college-based lecturers (11, 41%) and trainee reports on completion of their WIL (11, 41%). However, the methods of WIL assessments used the least (6, 22%) were through presentations by trainees when they return to college and through evidence collected by trainees.

TABLE 3: Method normally used by the institution to assess WIL pre-pandemic.

	Frequency	Percentage
Observations of trainees in the workplace by lecturers	11	41
Observations of trainees in the work-based by workplace assessors	14	52
Through evidence collected by trainees	6	22
Students completing task sheets provided by the college	8	30
Students reports on completion of WBL	11	41
Presentations by trainees when they return to college	6	22

Table 4 presents the method of information transfer between institutions and workplaces, and shows that most institutions and workplaces communicated through physical visits (12, 44%) followed by online platforms (9, 33%) and then telephone (8, 30%) on issues concerning WIL assessments.

TABLE 4: Methods of information transfer between institutions and workplaces.

	Frequency	Percentage
Using online platforms	9	33
By Telephone	8	30
Courier	1	4
Physical visits	12	44

Table 5 presents documents used by students to record WIL experiences.

TABLE 5: Documents used by students to record WIL experiences pre-pandemic.

	Frequency	Percentage
Manual Logbooks	24	89
Online logbooks	3	11
Portfolios	0	0
Reports	0	0

Respondents indicated that most students (24, 89%) on WIL pre-pandemic, used manual logbooks whilst online logbooks were only used in 11% of programs.

#### *Work-Integrated Learning Assessment During the COVID-19 Pandemic*

Table 6 shows that some assessors (11, 41%) continued with their face-to-face assessment whilst (2, 7%) switched to fully online assessment strategies. Findings suggest that most assessment (12, 48%) continued with a mix of both face-to-face and online WIL assessment methods.

TABLE 6: Methods used to assess WIL during the COVID-19 pandemic.

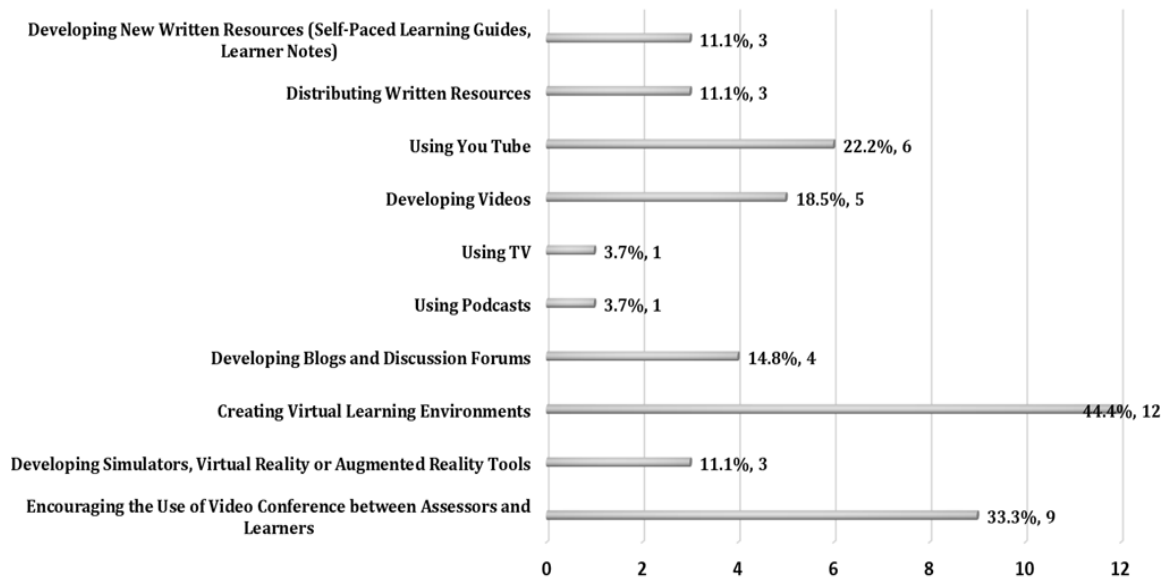
	Frequency	Percentage
Fully remote (online and/or offline assessment, no face-to-face contact)	2	7
Partially remote (a mixture of face-to-face , online and/or offline) assessment	12	48
No online or offline assessment offered as we continue providing face-to-face assessment	11	41
No online or offline assessment since all training was cancelled including WIL	0	0
I don't know	1	4

#### *Institutional Response Strategies to the Covid-19 Pandemic*

According to the findings, 55.6% of the respondents indicated that additional human and financial resources were committed in their institutions to create new assessment strategies, deploy new technologies and/or expand the use of online and offline WIL. However, 29.6% of the respondents indicated that no additional resources were added in their institutions whilst, 74.1% respondents indicated that they had challenges to adopt new WIL assessment strategies due to lack of proper guidelines.

Figure 1 shows that as for the development and expansion of resources to meet online assessment demands, the most common tools or resources that were developed include video conferencing n=9 (33.3%), discussion forums n=4 (14.8%), videos n=5 (18.5%) and Youtube n=6 (22.2%). To a lesser extent, tools or resources for offline distance learning were also being developed and expanded, which includes new written resources such as self-paced learning guides and learner notes.

FIGURE 1: Tools/resources developed by the institutions to meet online assessment demands.



Findings indicated that prior to the pandemic, the two colleges studied had some platforms that could be used for WIL assessment, but were limited to theoretical assessment in the college. For example, lecturers had already been trained on online teaching. One institution had introduced a new academic data management system, Academia, which could be used for uploading assessments and retrieval of assessments decisions and scores. The same institution has facilities for teaching and learning online. The other had also acquired some smart boards that could also support teaching and learning online. The online learning platforms had been established before the pandemic and continues to grow, allowing less contact interactions.

## DISCUSSION

This study examined changes in WIL assessment as a result of the COVID-19 pandemic of TVET students in two institutions in Botswana - from the perspective of work-integrated learning assessors and lecturers. It also focused on assessor skills like training, accreditation, and experience. The respondents cited several effects of COVID-19 on assessment of WIL, including the closure of some companies that took students on WIL, while others stopped taking students as a way of scaling down their workforce to effect social distancing. Where companies and workers continued to operate, a few students were allowed to continue with practical WIL (ILO et al., 2021). However, trainers could not visit companies due to travel restrictions and imposed curfews and as such, WIL assessments were disrupted (BQA, 2020b).

The above scenario indicates that COVID-19 had a detrimental effect on the assessment of WIL. Based on the findings, lecturers found it difficult to adapt to the new normal since they had not used online methods in assessing WIL. The use of online technologies in teaching and assessment should have long been adopted (Volini et al., 2020). Institutions were also exposed in terms of lack of preparedness of resources and education for lecturers. The World Bank (2020) concurs that the COVID-19 crisis brought a deeper understanding of the digital divide and related equity gaps, which require urgent attention. Education of TVET assessors and learners on use of new assessment strategies needs to be intensified. Lecturers need to adopt more flexible assessment methods coupled with education and support. Findings of the study exposed challenges with the usage of

IT and resources are not adequate to cater for both lecturers and students. Investments in technology (including IT platforms for online learning and tools) should be considered and connectivity-related issues should be tackled (World Bank, 2020). There is a need to incorporate both online based learning and WIL assessment as it is not easy to make a quick transition away from face-to-face WIL assessment. It is a process that requires careful planning and preparation. Therefore, after the pandemic, the systems in institutions should be updated and roles and responsibilities should be established and agreed upon with the students, for adoption of the other assessment methods for WIL. Institutions should move to blended learning and invest in online learning and assessment.

The findings of this study reveal that there was lack of resources needed to access online learning services. The World Bank (2020) argues that investments in remote learning need to embrace smart strategies to enable learning outside classrooms like online simulations and learning at work. Furthermore, trainees and lecturers were not flexible to accept change. This finding is in contrast to Kitchenham's (2008) assertion that as adult learners acquire knowledge and information, they engage in critical examination and evaluation of their existing perspectives and opinions to undergo a process of personal, social, and professional change.

Findings show that there are still some assessors making assessment decisions without accreditation and registration both in TVET schools and workplaces, yet all eyes are on TVET to equip learners with the requisite competences needed for employment (Barabasch, 2017). Findings suggest that WIL is assessed to a larger extent by college assessors, and to a lesser extent by work-based assessors. Findings reveal that learners predominantly record their WIL experiences in manual logbooks rather than using online logbooks, however, these are not used as a basis for final assessment decisions. WIL records are used as evidence and records of experiences earned by learners who are often required to further produce reports and at times make presentations of their experiences. This showed little transformation on the WIL assessment methods from pre-COVID-19 to the COVID-19 pandemic era.

From the study, some recommendations have been gleaned. Assessment policies must be quickly revisited and transformed, in all practical cases, to prevent long-lasting damage to young peoples' career prospects in terms of education and labour market prospects (United Nations, 2020). Institutions need to provide more flexible WIL assessment tools and methodologies. In essence, additional resources must be deployed for research to improve, rebuild and find suitable WIL assessment methods going forward, if TVET is to recover. More collaboration and memorandum of understandings (MOUs) built on genuine trust between TVET colleges and workplaces to open up WIL opportunities are needed (ILO, 2020b). There must be improved coordination and scheduling of assessment activities between TVET colleges and workplaces. In addition, the Botswana Qualifications Authority (BQA) must do more on quality assurance processes in WIL. Assessors both in colleges and workplaces must be adequately trained and accredited for them to be allowed to make WIL assessment decisions. There is a need to provide education on the use of online assessment methods to ensure that lecturers and workplace assessors observe WHO guidelines during assessment. Institutions need to improve access to the internet, unlimited access will enable the communication which is uninterrupted between assessors in workplaces, institutions and learners. From the respondents' perspective, institutions were not doing enough to support lecturers/assessors to respond to the challenges and to move into online assessments. However, this study did not investigate how online tools like video conferencing, blogs, discussion forums, videos and YouTube were used, and this can be an avenue for further study.

## CONCLUSIONS

The study examined the assessment tools and procedures for WIL adopted by TVET colleges in Botswana during the COVID-19 pandemic. In accordance with the transformative learning theory, the study established that there is need for transformation of assessment innovations in TVET institutions based on information technology and fourth industrial revolution (4IR) to assess WIL, which has been disrupted by the COVID-19 pandemic. Empirical evidence from the study established that, although the pandemic has created many opportunities for more technological teaching and learning interactions online, its impact on assessment of practical skills development essentially remains a challenge. To comply with COVID-19 protocols, learning institutions are challenged to revisit their assessment tools and procedures for WIL during such pandemics. Despite having qualified and accredited assessors, assessment of WIL during the COVID-19 pandemic exposed a number of challenges. Lecturers were not well versed in using online assessment tools, hence most of them kept to their old ways of assessing. Although some institutions occasionally used online learning platforms for learning before COVID-19, at the onset of COVID-19 assessment did not go fully online. WIL assessment continued with a mix of face-to-face and online assessment methods. From the study, it can be gleaned that there is need to provide professional development for lecturers in digital skills, use of new assessment methods and pedagogical tools for effective assessment of WIL during such pandemic times. It was also established that institutions which were infrastructure ready, were able to transit smoothly to online assessment of WIL, though with some challenges. Therefore, TVET institutions need to plan for post COVID-19 to avoid implementing reactive measures which are detrimental to the education of future workforce (Reaves, 2019). There is a need for alignment of online provision with skills assessments and forecasts. Collaboration between workplaces and learning institutions on WIL activities, including assessment, is not robust in Botswana and needs to be improved, together with coordination of assessment procedures, so as not to delay trainees from completing WIL components post COVID-19.

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## About the Journal

The International Journal of Work-Integrated Learning (IJWIL) publishes double-blind peer-reviewed original research and topical issues dealing with Work-Integrated Learning (WIL). IJWIL first published in 2000 under the name of Asia-Pacific Journal of Cooperative Education (APJCE). Since then the readership and authorship has become more international and terminology usage in the literature has favored the broader term of WIL, in 2018 the journal name was changed to the International Journal of Work-Integrated Learning.

In this Journal, WIL is defined as "*an educational approach that uses relevant work-based experiences to allow students to integrate theory with the meaningful practice of work as an intentional component of the curriculum. Defining elements of this educational approach requires that students engage in authentic and meaningful work-related task, and must involve three stakeholders; the student, the university, and the workplace*". Examples of practice include off-campus, workplace immersion activities such as work placements, internships, practicum, service learning, and cooperative education (Co-op), and on-campus activities such as work-related projects/competitions, entrepreneurships, student-led enterprise, etc. WIL is related to, but not the same as, the fields of experiential learning, work-based learning, and vocational education and training.

The Journal's main aim is to enable specialists working in WIL to disseminate research findings and share knowledge to the benefit of institutions, students, co-op/WIL practitioners, and researchers. The Journal desires to encourage quality research and explorative critical discussion that leads to the advancement of effective practices, development of further understanding of WIL, and promote further research.

The Journal is ongoing financially supported by the Work-Integrated Learning New Zealand (WILNZ; [www.wilnz.nz](http://www.wilnz.nz)), and the University of Waikato, New Zealand, and received periodic sponsorship from the Australian Collaborative Education Network (ACEN) and the World Association of Cooperative Education (WACE).

## Types of Manuscripts Sought by the Journal

Types of manuscripts sought by IJWIL is primarily of two forms: 1) *research publications* describing research into aspects of work-integrated learning and, 2) *topical discussion* articles that review relevant literature and provide critical explorative discussion around a topical issue. The journal will, on occasions, consider good practice submissions.

*Research publications* should contain; an introduction that describes relevant literature and sets the context of the inquiry. A detailed description and justification for the methodology employed. A description of the research findings - tabulated as appropriate, a discussion of the importance of the findings including their significance to current established literature, implications for practitioners and researchers, whilst remaining mindful of the limitations of the data, and a conclusion preferably including suggestions for further research.

*Topical discussion articles* should contain a clear statement of the topic or issue under discussion, reference to relevant literature, critical and scholarly discussion on the importance of the issues, critical insights to how to advance the issue further, and implications for other researchers and practitioners.

*Good practice and program description papers.* On occasions, the Journal also seeks manuscripts describing a practice of WIL as an example of good practice, however, only if it presents a particularly unique or innovative practice or was situated in an unusual context. There must be a clear contribution of new knowledge to the established literature. Manuscripts describing what is essentially 'typical', 'common' or 'known' practices will be encouraged to rewrite the focus of the manuscript to a significant educational issue or will be encouraged to publish their work via another avenue that seeks such content.

By negotiation with the Editor-in-Chief, the Journal also accepts a small number of *Book Reviews* of relevant and recently published books.



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