
The Quality of Supervision and Assessment in Industry-Based Learning

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ABSTRACT

Effective student assessment measures the rigor, effectiveness and quality of learning and teaching. There is a persistent concern among higher education practitioners about the accuracy and quality of academic supervision and assessment, particularly in areas of experiential learning. The purpose of this study was to critically evaluate practitioner conceptions on the effectiveness of supervision and assessment practices of industry-based learning in enhancing quality academic practices carried out at five universities in Zimbabwe. This paper analyses stakeholder views, reflections and understandings on student supervision and assessment processes in industry-based learning programs in Zimbabwe universities. Through interviews, focus group discussions, and open and closed questions in structured questionnaires, the participants in the mixed methods study, drawn from universities and their workplace partner organizations, give insights into their activities that characterize the dominant student supervision and assessment practices. The research results show that the participants were moderately satisfied with the overall assessment processes, raising concerns on quality issues, supervisor qualities and competencies, assessment visits by lecturers, and student guidance in the workplace. It is evident that the assessment systems in the work-integrated learning program in the affected universities not only compromised the desired confidence and trust of the students in their assessors but unsettled the assessors themselves, a situation that would naturally invite appropriate corrective action. Participative assessment, an approach where the facilitator seeks to directly involve and share the responsibility for assessment with learners is compatible with industry-based learning approaches because students can engage in self-regulation and intrinsically sanctioned learning.

Keywords:

Industry-Based Learning; Work-Integrated Learning; Participative Assessment; Supervision and Assessment; Quality.

ABSTRAK

Penilaian siswa yang efektif mengukur ketelitian, efektivitas dan kualitas belajar dan mengajar. Ada kekhawatiran yang terus-menerus di kalangan praktisi pendidikan tinggi tentang keakuratan dan kualitas supervisi dan penilaian akademik, khususnya di bidang pembelajaran pengalaman. Tujuan dari penelitian ini adalah untuk mengevaluasi secara kritis konsepsi praktisi tentang efektivitas pengawasan dan praktik penilaian pembelajaran berbasis industri dalam meningkatkan kualitas praktik akademik yang dilakukan di lima universitas di Zimbabwe. Makalah ini menganalisis pandangan, refleksi, dan pemahaman pemangku kepentingan tentang pengawasan dan penilaian siswa proses dalam program pembelajaran berbasis industri di universitas-universitas Zimbabwe. Melalui wawancara, diskusi kelompok terfokus dan pertanyaan terbuka dan tertutup dalam kuesioner terstruktur, para peserta dalam studi metode campuran, yang diambil dari universitas dan organisasi mitra tempat kerja mereka, memberikan wawasan tentang kegiatan mereka yang mencirikan praktik pengawasan dan penilaian siswa yang dominan. Hasil penelitian menunjukkan bahwa peserta cukup puas dengan proses penilaian yang berlaku, meskipun kekhawatiran tentang masalah kualitas, kualitas dan kompetensi supervisor, kunjungan penilaian oleh dosen, dan bimbingan mahasiswa di tempat kerja. Jelaslah bahwa sistem penilaian dalam program pembelajaran terpadu kerja di universitas-universitas yang terkena dampak tidak hanya mengkompromikan kepercayaan dan kepercayaan yang diinginkan dari para mahasiswa kepada para penilai mereka, tetapi juga mengganggu ketenangan para penilai itu sendiri, sebuah situasi yang secara alami akan mengundang tindakan korektif yang tepat. Penilaian partisipatif, sebuah pendekatan di mana fasilitator berusaha untuk secara langsung melibatkan dan berbagi tanggung jawab penilaian dengan peserta didik kompatibel dengan pendekatan pembelajaran berbasis industri karena siswa dapat terlibat dalam pengaturan diri dan pembelajaran yang didukung secara intrinsik.

Kata Kunci:

Pembelajaran Berbasis Industri; Pembelajaran Terintegrasi Kerja; Penilaian Partisipatif; Pengawasan Dan Penilaian; Kualitas.

1. Introduction

In endeavoring to facilitate a smooth transition for graduates entering the world of work, many universities worldwide adopt various strategies and pedagogies for teaching and learning that involve the integration of classroom with work sessions or campus study with workplace excursions, collectively known as work-integrated learning. Such arrangements take place on the understanding that the 'engaged university is committed to direct interaction with external constituencies and communities, the sites of actual work, through the mutually beneficial exchange

of ideas and practices, application of carefully selected knowledge, deployment of expertise and resources, exploration, and information sharing (Phuthi, 2012). These interactions both enrich and expand the university's learning and discovery functions and enhance community capacity (Culum, 2014).

Learning and teaching are intrinsically linked with assessment primarily to measure the effectiveness and attainment of instructional objectives (OECD, 2013). Classroom learning is commonly and conveniently assessed both continuously and terminally through the very familiar forms comprising written exercises, quizzes, tests, assignments, essays, examinations, and oral presentations, individually or in groups, among many methods. Student manipulative skills commonly get assessed through workshop and laboratory practical activities that are often contrived and repeatable. Students produce short reports, designs, or artifacts for evaluation by the assessor. On the other hand, learning through practical work experience in real-life situations poses unique assessment challenges, particularly when the student has to operate as part of an established workforce in a running organization (Bandy, 2011). Such experience has been assessed through short, direct supervision of the performer at work, learners' periodical and terminal oral or written presentations, reports, products, small projects, or portfolios compiled by the learner.

The majority of universities in Zimbabwe have, since the early nineties, adopted a program of work-integrated learning in which all undergraduate students spend a specified (usually remunerated) full year of internship in discipline-specific environments or workplaces as part of the requirements of their degree programs. During that year, each student becomes 'subject to the company's regulations and is expected to function like a full-time employee of the company' (NUST, 2020). This model of internship, a version of work-integrated learning, and known in other contexts as industry-based learning, workplace-based learning, or a version of academic service-learning, is hailed as a pedagogy relevant for developing country universities, in which the predominantly rural and socio-economically disadvantaged university learners get supported or nudged to cross the border into the alien 'industry culture'. At the time of this study, the reality at the macro-level of the Zimbabwean situation is a dire socio-economic drawback that has curtailed the normal operations of both universities and workplace organizations alike. But such a situation is found in developing countries in general and in economically unstable nations in particular. Thus, the lessons to be learned are presumably the same.

This paper aims to identify and analyze insights of practitioners on the role of supervision and assessment of industry-based learning in enhancing quality academic practices carried out at five universities in Zimbabwe, namely The National University of Science and Technology, Midlands State University, Chinhoyi University of Technology, Harare Institute of Technology and Great Zimbabwe University, one of which pioneered the particular format of the innovation. All five universities roll out the pedagogy through a program generally referred to as industrial attachment (IA). The paper addresses the question: How do participants perceive the industrial attachment

program's student supervision and assessment processes, and what are the implications of such perceptions? .

The study has adopted a self-designed conceptual framework linking work-integrated learning with learning experiences, university-community collaborations and community development (Figure 1). Such a framework recognizes industry-based learning pedagogy and the industrial attachment program as functions of broader sustained and mutual partnerships supporting various value-adding operations of engaged partners, who are themselves learning organizations or organisations that learn (Shaw, 2017). The community development facet of the conceptual framework entails organisations keen on identifying the needs of their surrounding communities, empowering them to actively engage in self-renewal and to strive for client satisfaction through sustainable developmental programmes. The student learning experience facet enhances familiarity with the workplace, and encourages cooperative education in which many institutions or sectors of society contribute to the education of the learners among them. They also engage in service-learning, a way of learning in the process of doing a service to the community (Jiusto & Vaz, 2016).), and experiential learning. The learners' benefits of this type of learning have been previously widely explored, and in one particular case study found to be 'personal' rather than 'academic' (Hebert & Hauf, 2015). This signifies broader learning with a strong personal and social outreach, a necessary ingredient for community engagement and development.

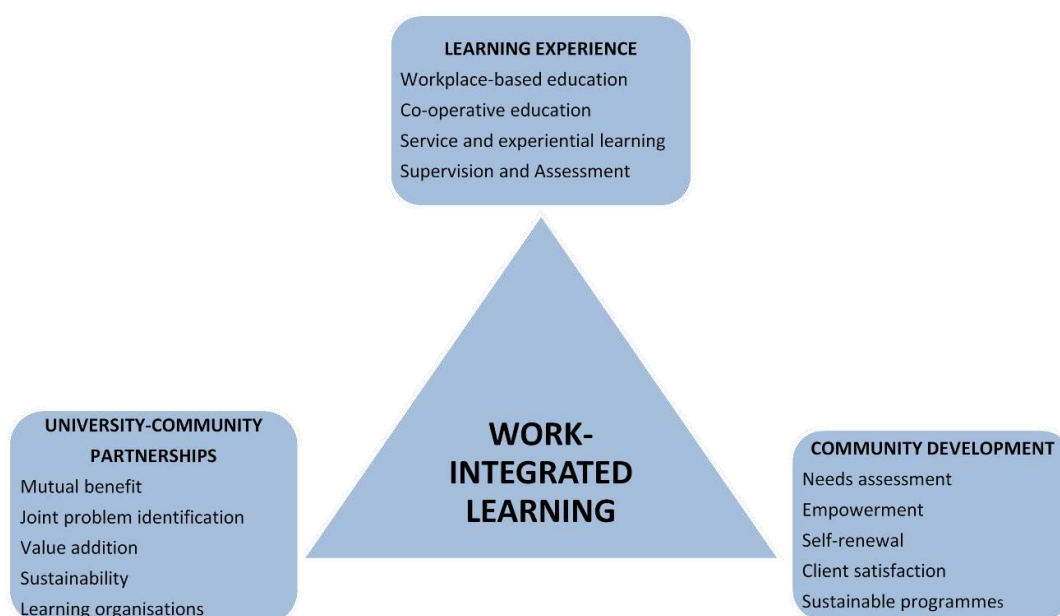


Figure 1: Conceptual Framework for work-integrated learning

In all the learning experiences alluded to above, students gain official confirmation of success and certification through due processes of supervision and assessment. Supervision involves some form of observation, proximal or remote, clinical or superficial, with the aim of teaching, guiding and/or correction, while assessment aims at judging the capacity, receptiveness, efficiency, and

utility of prior learning by the learner. In industry-based learning, assessment is insufficient without some form of supervision (perhaps mentorship as well), and the two are thus justifiably inextricable. Moreover, Musa (2020) found a link between the standards of school principals' instructional supervision with the level of their teachers' quality performance, signifying the influence of a supervisor's skill on the achievement of the student supervisee.

Standard assessment practices for classroom learning barely assess the real-life and real-time qualities of independent and critical thinking, manipulative intelligence, creativity, practical knowledge, skills and their application to tasks. In many instances, university lecturers utilize summative performance of learners without the possibility that the desired outcome may not necessarily be the result of desired processes. It is surmised that creative thinking habits can be instilled into a habit that is owned by students and that to achieve creative thinking skills in students, creative and innovative teachers are also needed in planning and implementing learning (Zarvianti and Sahida, 2020). The critical thinking skills referred to above derive from critical self-reflection, which helps us deeply contemplate how we apply our scientific and technological knowledge in pursuit of social and economic development (Phuthi and Mpofo, 2021). Participative assessment involves forms of assessment where the lecturer or facilitator seeks to directly involve and share the responsibility for assessment with learners (Darling-Hammond et al, 2019; López-Pastor and Sicilia, 2015). Workplace-based learning approaches are compatible with participative assessment because students can engage in self-regulation, which refers to the deliberate planning and monitoring of the cognitive, psychomotor and affective processes that are involved in the successful completion of academic tasks (Rao, 2020). In essence, students at almost any age can take charge of their own learning, and self-regulated learners are always becoming more flexible and proficient with time in organizing what they have personally planned themselves and what their teachers, among other people, have planned for them.

Assessment of physical engagement at the workplace is often subject to critical analysis since instruction and assessment take various dimensions ranging from one-on-one encounters to remote-controlled and mediated formats. Moreover, the working environments of companies and organizations differ considerably, and the students get scattered in different companies where it is only procedural to think of uniformity and comparability in their learning experiences.

Development of appropriate tools and techniques for assessing student experiential learning in industry-based learning has often included appointing a supervisor at the workplace to assist the university lecturer or academic supervisor who pays scheduled but brief visits to engaged workplaces. The challenge is in the comparative objectives, standards and capabilities of workplace supervisors, often difficult to regulate or standardize. Scholz (2020) identifies four assessment methods suitable for student experiential learning at the workplace: portfolios and projects, performance appraisal, assignment, and individual and group presentation.. These methods implicitly incorporate assessment of knowledge constructed by learners based on their own concrete

tasks and problem-based learning rather than spoon-fed knowledge and skills acquisition that sometimes feature in classroom learning.

In advocating for increased research on assessing for both the quality and quantity of social change derived from what they call 'community service learning' or 'civic responsibility endeavors, Hebert & Hauf (2015) recommend 'social' methods of assessment that correct the notion that learning may happen in social contexts while assessment does not. They recommend a description of assessment in these circumstances as "...the evaluation of the effectiveness of social contexts in community service-learning for rearranging what we have always known..." Thus some assessment of the social environment in which the learner is a participant ought to accompany the assessment of the learner, more so since environments in workplaces and in real world situations are all unique. Johnstone and Soares (2014) advocate for an infusion model that integrates competency-based principles into the mainstream mandate of the university, where students can learn at a variable pace and are supported in their learning, a requirement for quality graduates in the fields of science, technology, engineering and mathematics (STEM).

2. Methods

To satisfactorily capture perceptions and opinions of key players and participants in workplace-based learning, we sought a combination of methodologies that permitted participants' voices to be spoken and heard, allowing the participants to speak from an understanding constructed from their own experiences and social interaction with others and their environments (Dawson, 2009). The study population included the currently enrolled students in their post-industrial attachment year, lecturers, and industry-based supervisors. The sample for interviews comprised 20 students (four from each university), five lecturers, and five industry-based supervisors. The questionnaire sample consisted of 1000 students from each university in their year of attachment, 10 lecturers and 10 industrial supervisors. The mixed-methods methodology was chosen to provide methodological triangulation of qualitative and quantitative data, and involved the integration of the data at both the collection and the analysis stages in the research process.

The contemporary embedded mixed methods design (Creswell, J. W., & Plano-Clark, V. L. (2017) used in this study is one in which quantitative methods are used to embellish a primarily qualitative study, giving the qualitative methods a greater priority over the quantitative (Figure 2). Data were collected essentially concurrently through semi-structured interviews and a questionnaire in three matched versions for students, lecturers, and industry supervisors, consisting of closed-ended satisfaction survey-type, as well as open-ended opinion questions. The interviews covered theoretical views and practical experiences of academic and industrial supervisors and university administrators. The questionnaire solicited information on background information such as students' faculty, gender, age, and work experience prior to enrolment at university (6 items) as well as on respondents' views derived from their experiences with various aspects of the industrial

attachment program (27 items). Of concern in this paper are the questions relating to supervision and assessment.

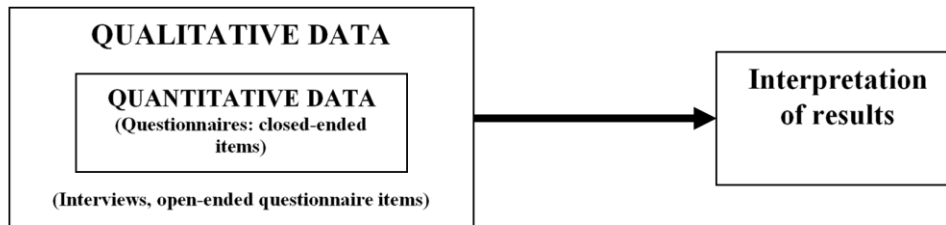


Figure 2: The embedded concurrent mixed methods research design
(Adapted from: Creswell & Clark, 2007)

3. Results and Discussion

A total of twenty-four interviews were conducted with three administrators and nine university lecturers, two industry supervisors, three administrators and seven lecturers from five other universities, while 363 post-industrial attachment students, forty lecturers and thirty-four industrial supervisors responded to the appropriate versions of the questionnaire. Industry supervisors and lecturers from other universities were scattered in different cities and towns.

The students expressed moderate satisfaction with the assessment procedures in their industrial attachment experience. This was revealed by a factor analysis on student questionnaire responses to 19 closed-ended Likert scale variables which confirmed assessment processes with an eigenvalue of 1.05 as one of three factors in the broader study. The 4-point Likert scale numerical values had the following descriptions:

1 = None; 2 = Slight; 3 = Moderate; 4 = Great. The three *satisfaction* survey questions defining the assessment and supervision factor are given in the box below:

AS23. Satisfaction with the supervision and assessment by the industry-based supervisor.

AS24. Satisfaction with the supervision and assessment by the university-based supervisor.

AS25. Adequacy and appropriateness of the overall process of assessment of the IA experience.

The explained variance of 1.68 on rotated factor loadings in this factor was not exceptionally high. The mean of the student's responses on the 4-point Likert scale was 3.07, signifying approximately 7 percentage points above the *moderate* response, and compared to 3.06 and 3.30 by lecturers and industrial supervisors, respectively. The factor included the lowest rated item (item 25) in the whole questionnaire, with a mean score of 2.97 by students. The students thus rated least the adequacy and appropriateness of the overall assessment processes of their industrial attachment. For their part the lecturers rated item 23 the least, registering their lowest satisfaction with the supervision and assessment by their counterparts, the industry-based supervisors. The above was further confirmed in all the sub-groupings of the student respondents by faculty, gender, age and previous work experience. Lecturer and industry supervisor sub-groupings samples were too small and produced subtle variations. The Kruskal Wallis analysis of variance (ANOVA) confirmed that the differences between student, lecturer and industry supervisor responses were not significant, giving $p = 0.2275$ for the factor. In other words, although the students, lecturers and industry supervisors appeared to differ (or vary) in their scores in each factor, the difference was not significant.

Qualitative data was analyzed from the participants' responses to open-ended items in the questionnaire and from interviews. Respondents raised some pertinent issues related to supervision and assessment of the students' industry-based learning experiences, particularly quality assurance measures. Both the logistical (including procedural) and the professional aspects of student supervision and assessment were brought up in the responses, with more of the former as described below.

3.1 *Quality in and of Student Assessment*

Several views were expressed on the quality of student assessment in the industrial attachment program. Some lecturers were particularly keen on adherence to comprehensive processes in assessing engineering students, noting that they had to take their students through a series of assessment procedures including on-site observations by qualified industrial assessors. One respondent described the processes carried out in his faculty involving setting up of assessment panels consisting of the company or section engineer to whom the student reported during the training and 'any number of foremen of the departments through which the student went' [Respondent #NM02].

Some respondents thought that the ideal supervision of students had not been occurring at the university in the preceding few years, compromising the quality of student-written reports and oral presentations, which formed a major part of the overall student assessment portfolio of their industry-based learning experience. An engineering lecturer (#NL06) revealed that his department had taken strict measures to ensure that student supervision and assessment were of standards acceptable to external watchdog bodies and legislation that controlled the accreditation processes for degree programs. His department had to follow up on the students and ensure that they were

regularly supervised by professional engineers registered with the Engineering Council of Zimbabwe (Respondent #NL06).

There was a perception that in general, students' scholarly productivity had declined over the years, and in particular, students' writing skills had declined tremendously, even though this was not due to students' own fault entirely (Respondent #NM03). This was observed against the general decline in the quality of most of today's university students' literary skills that are necessary for the accurate and attractive reporting needed to precisely depict processes such as the students' industrial experiences. Students' prior learning was important. Some respondents proposed the introduction of supportive communication and professional writing short courses by the university to assist students in reaching the required minimum level of academic scholarship. The need for suitably qualified facilitators and mentors, both at university and in industry, who would go on to provide qualified and professional supervision and assessment of the students' abilities and experiences while on attachment, was brought into the spotlight by some lecturers who observed that the brain and skills drain that had swept the country in the preceding decades had led to the erosion of the quality supervisory mechanism needed by the student, leaving the students to make do with only second best supervision and assessment processes. One female student from the Faculty of Commerce gave a comprehensive narrative:

I am happy of course with the supervision I got from my industry-based supervisor, but the overall mark that he gave me in the end was quite demotivating. If only I had [had] more time in the organisation, I do not think I would perform in the same manner as I had done earlier. I implemented several mutually agreed changes in the organization and implemented some new policies and at some instances formulated them. Some of my colleagues who did absolutely nothing during their attachment placement period earned marks higher than mine. Perhaps the college [university] supervisors need to closely analyze our submitted reports for accuracy. Females [ladies] at times are victimized unnecessarily, like being asked sexual favours in return for marks. This is a great disadvantage (Student #0132).

This respondent raises additional student welfare issues, which were crucial in the planning and implementation of industry-based learning, but are not the subject of this paper. Another quality issue was that the reduced number of qualified industrial supervisors in workplaces (owing to brain drain) led to each supervisor overseeing an increased number of students at a time, leading to a single individual making 'judgements over so many students... and ... his result is not moderated by somebody else' (#NL04).

Some students had to go on industrial attachment in organisations convenient to them or into neighbouring countries, either because the workplaces were near their homes where they could cut down on expenses, or they would be attached at their parents or relatives' workplaces. In the latter case, 'you end up having the parent being the supervisor, or a relative being a supervisor. That is one problem.' (#OULE08).

Lecturers noted lapses in professionalism in the award of marks by their industry partners and called for updating assessment procedures and instruments (Lecturer #1028). One observation was that, 'The marks students earn from industrial attachment hardly reflect their actual performance but how friendly they were to their supervisors. The students' final reports submitted are subjectively marked, which compromises quality.' (Lecturer #1035). These observations can be linked to the quality of student mentoring, which, according to Rose (2020) are intricately connected to the intern's overall perception of their internship experience, and exposed them to the norms of high demands placed on employees within organizations.

3.2 *Lecturer Visits*

The number of visits by the institution's academic supervisor(s) was the most popularly cited concern by both university management and lecturing staff. The key concern was that the number of visits in the recent years had been reduced from the recommended three per year to two, one (or none) due mainly to economic problems. One management staff member (#NM02) noted that the reduction of the number of visits was disadvantaging not only the students but the academic supervisors as well, who would normally want to 'use the first visit to better understand the company' and 'spend at least half a day in that factory', rather than go straight into assessment and awarding a mark based on very little lecturer knowledge of the student's circumstances and the workplace.

The timing of supervision and assessment visits by academic supervisors in workplaces was another thorny issue. If students were not followed up early enough, they ended up 'misbehaving one way or another (#OULE06), and if a single early visit was made, the student would be assessed based on very little experience on their part. Moreover, some companies grew impatient with the university if it failed to honour its side of the bargain over the years. Amidst the chaos in the planning and implementation of visits, some students reportedly got away without receiving a single academic visitor. A bitter student respondent retorted, 'Some of us did not get assessed despite the fact that we paid the required fees. Why pay for a service that will ultimately not be delivered?' (Student #0047). Another blamed lecturers for not turning up for assessments, adding that if ever they did, '... they will be in a hurry, they hardly do anything' (Student #0284). Another concurred, saying, '... they did not visit me where I was and [I] do not know how they got my supervisor's mark' (Student #0323). For their part, industry supervisors added their call for more frequent lecturer visits and follow-ups as 'a control measure to ensure that the student focuses on value-adding activities during industrial attachment' (Industry #2012). Communication between academic and industry supervisors concerning the former's visits to assess students was causing problems for industry, perhaps due to challenges of transport, distances, and finances (#IND02).

To combat the lack of uniformity in assessing various students in different company workplaces by different supervisors at different times, a suggestion was made that students could be

made to examine their industrial attachment experiences as a key component in their overall assessment (#NL09). The purpose of such an examination would be to standardize the assessment and not the learning experience. The examination would be a compulsory common paper for all post-industrial attachment students, composed of a section with common compulsory questions for every student, and another with elective questions that 'narrow[ed] down to the area of specialization' (#NL09). The examination would complement other assessment components of the overall industrial attachment experience, as observed by the lecturer below:

.... [I] am thinking of that portion where the industry [supervisor] will also assess the student. We have tried all we can in the department, when we go to visit industry ... [to] explain to them our expectations of them when they are awarding marks, because some award a student 100%. ... And you can't change [that] ... [In] practical work you cannot [score] 100% even if you were [a] doctor. So there is that loophole. We have no control over the marks which the industrial supervisors award students. But when we introduce an exam, we have control over it ... We don't want to disappoint or disregard our industrial partner contributions. But the examination will neutralize their marks and we will get a good score which that student deserves (#NL09).

Apparently, the problem of such an examination becoming a test of written expression on paper rather than grasping work knowledge, skills, and people dynamics was not considered important by these respondents.

3.3 General Issues on Students' Performance and Assessment

On whether the students they had had on industrial attachment needed a lot of supervision or not, one industry respondent (#IND01) posited, '... at most they have been able to work on their own, and the students' overall performance was commended for being appropriate and complementary to the functions of the company. 'It's actually been excellent. The ones that we've had so far... have been excellent in their work' (#IND01).

Assessment of students on industrial attachment in a foreign country necessitated the identification of a suitable university academic in that country to act as the academic supervisor. In some cases, students sponsored one of their lecturers to travel into the neighbouring country to assess them (#OULB02), but this raised logistical and ethical connotations. Additionally, cases of students capitalizing on the loopholes of the assessment procedures and the company set up were brought up, with warnings that a lot of plagiarism did go undetected when students reported to different supervisors. '[The university] also needs to take the issue of plagiarism more seriously because it affects us when we are making project write-ups on attachment' (Student #0045).

What are the implications of the respondents' perceptions and opinions portrayed in this study? There was generally some appreciation of quality when all systems, plans, and actions were

taken holistically and contextually. Awareness of inadequate student supervision and assessment processes promises that this is an area on the radar for both management and practitioners which will be addressed when stability returns in the broader socio-economic outlook of the country and when teaching, learning, policy-making and other systems of the university were put in proper perspective. Suffice to say that there always existed challenges for the university community to pull efforts together, with or without national economic challenges.

The overall process of supervision and assessment of students was rated as moderately satisfactory by the respondents. The contentious issue of lecturer visits, their frequency, duration and timing appeared to be a persistent challenge that sought answers beyond the academic sphere of influence. Also, attendant to this was the level and nature of communication between academic and industrial supervisors that was not conducive to a healthy partnership between the university and industry. The particular reference made to lecturer visitation practices raises the debate where students cry out for transparency and impartiality in the assessment outcomes of the visits. The authenticity of marks obtained from both the visiting lecturer and the industry-based supervisor point out to some collaborative challenges that need severe urgent attention. Students needed to trust and defend the source of the marks and grades that they obtained. The suggestion to introduce a written examination for assessing this totally field-based learning experience, an admission that due procedures were flawed, is a teaser for pedagogy. The findings of this study echo those by Nduna (2012, 238) who, in his study centring on universities of technology in South Africa, remarks:

There was no evidence of students being assessed by an industry mentor or supervisor in some cases. Assessment was left entirely to practitioners The moderation of assessment was lacking Assessment and credit awarded were not appropriate to the type and complexity of learning in some programs.....

To address the challenge of the uncertainty of lecturer visits and their timing, faculty-wide or cross-faculty assessment instruments were recommended to capture the student's experiences, progress, and contribution to industry functions and pro-activeness at regular intervals of say, every three months. This is the application of self-regulated learning and participative assessment, an important contribution with a potential to produce intellectually confident graduates able to take responsibility for their personal development of knowledge and skills (Hodgson 2006:34). In the current advancing technological era, research and investigation into the possibility of integrating reliable online or mediated interactivity between lecturers on campus and students at workplaces could be explored as a way to capture student performance on a continuous basis. In this way, students themselves would perceive the authenticity of the assessment grades they eventually attain.

To enhance the capability of industry supervisors in producing more authentic and acceptable assessment grades, academics could involve industry supervisors in the development and interpretation of relevant assessment instruments and keys, to enhance their understanding of measurement of human psychomotor performance. Extensive investigations into the effects and

acceptance of various assessment formats on students could assist the university to benchmark itself with like-minded institutions worldwide.

Le Clus (2011) posits that learning in the workplace should not be taken for granted or left to chance. In agreement with Darling-Hammond et al (2019) who would want students to be enabled to set objectives and assess their own achievements, Phuthi (2012) suggests that project work, mini-research and development tasks for real clients, course advisory groups comprising professionals from relevant workplace areas, and the involvement of similar external professionals in the teaching programme and in assessment of student work 'are examples of ways the workplace and university campus learning have been linked'. The workplace-based learning programme by its nature is one of the subsystems of the whole university which requires integration with other sub-systems 'in order to enhance the quality of the [university's] core business often portrayed as teaching and learning, research and community service' (Brits, 2011:1296).

If, as observed above, students can doubt the marks or grades awarded to them as an indication of their performance at the diverse workplaces, and if lecturers mistrust the mark awarded by some industry supervisor which they cannot change, the authenticity of the university grading system is called to question. How do we justify a student attached alone in a remote small Company A under a lenient industrial supervisor and who gets one visit from the academic supervisor getting a first-class pass, while another student attached as one of a highly competitive group at a big industrial Company B under a strict industrial supervisor and who gets three academic supervisor visits getting a lower second class pass in the continuous assessment component? In some cases, where student concerns of fairness in the grading system have been prominent, a pass/fail result would have been preferred to a six-point scale, even if this has its own questionable implications.

The above arguments about the students' satisfaction with both their university-based and industry-based supervisors draw attention to the challenges of an engaging university in the twenty-first century. Such a university not only pushes knowledge production, but regards the primary contribution coming via structural improvements to the knowledge exchange environment, organization, governance and policy frameworks and participates in regular interactions between knowledge producers, users, intermediaries and policymakers to create networks with systemic regional properties (Sánchez-Barrioluengo and Benneworth, 2019). Considering quality practice is only logical when satisfaction is understood in terms of well-informed parameters such as lecturer visits to industry in time and over appropriate periods. This paper has woven together the expectations of the students (the learners), with the responses of their supervisors and their approach to address the challenges in the pedagogy of industry-based learning, a feature not easily found in other research literature.

4. Conclusion

Issues raised in this study converge on the expectations of participants in a work-integrated learning programme on their realisation of quality assessment, regularity and adequacy of academic

supervision and the effectiveness of such supervision, reliability of assessment grades by both university and industry-based supervisors, qualifications of industrial supervisors, student cheating and plagiarism, among others. The essence of sound assessment procedures and processes in industry-based learning is that the graduate who later operates in the workplace not only demonstrates much easily the utility of the university as an empowering institution of higher learning, but also helps build social cohesion, demonstrating to the concerned public the benefits of higher education, the concerns of the university about its surrounding community and the integration and goodwill between 'town and gown' (Ehlenz, 2015). Such assurance boosts the confidence of students' confidence in university programs with the work-integrated learning component. There is need for furthering research into models for conducting supervision and assessment that satisfy all stakeholders nearly uniformly. It is crucial for students, lecturers and industry supervisors to find mutually agreeable methods of determining student performance that accurately predict future long-term performance of graduates in the variety of workplaces.

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