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Challenges in Transforming Assessments for 21st Century Skills Development: Lecturers' Perspective

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Abstract

The primary purpose of an assessment in pedagogy is to provide data and revise planned instructions. As the producers of skilled labour for the private sector, private higher education institutions (PHEIs), need to facilitate the transformation of assessments focused on developing 21st century skills competencies in students. In preparing for Industry 4.0, the private sector in Malaysia is concerned about fresh graduates not being adequately skilled for the workplace. The gap can lead to unemployment and a shortage in skilled labour. This research is designed to understand the challenges in transforming assessments to address the 21st century skills gap. Based on an epistemological belief through a social constructivist interpretive framework, a case study approach is used to co-construct the reality shaped by the course lecturers' experiences. Based on purposeful sampling, two (2) business lecturers with over five (5) years of teaching experience, and familiar with the diploma standards were selected from the School of Business. Data was collected using semi-structured interviews, document reviews and audiovisual materials. A data analysis strategy of reducing codes to themes and identifying patterned regularities was used to produce a written report. The findings reveal the challenges faced by lecturers in transforming assessments to develop 21st century skills. The recommendation is for assessments to be transformed based on private sector skill needs to keep up with the changing work skills demands of Industry 4.0. Continuous initiatives in shared value partnerships with the private sector will ensure that the development of 21CS remains relevant.

Keywords: Pre-university business lecturers, 21st century skills, Private sector partnership, Transforming assessments.

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Contents

Contribution of this paper to the literature

The primary purpose of an assessment in pedagogy is to provide data and revise planned instructions.

1. Introduction

In the global transformation towards Sustainable Development Goals 2030 (SDG 2030) Sustainable Development Goal 4.7 in education is to ensure that all learners acquire the knowledge and skills to promote sustainable development. The shift required in education for sustainable development is to achieve the need for 21st Century Skills (21CS) competencies in problem solving, collaboration, critical thinking and communication. A recent study showed that assessments designed to develop 21CS are in its early stages of transformation and that most assessments are summative (Care *et al.*, 2019). Despite an increase in the visibility of assessment concepts and objectives across the world, overall assessment systems have remained summative for the purpose of certification, education progress and accountability (Care *et al.*, 2019). Founder, director and author of professional teacher development "TeachThought", Terry (2019) stated that transforming assessments will require instructors to be mindful in designing assessments to reflect the real world. Terry (2019) also stated that assessments should not be overvalued in terms of measuring human potential, but instead inform the learning process from curriculum mapping, instructional and assessment design, to measure learning for future work needs in Industry 4.0.

2. Literature Review

2.1. Instructor Competencies in Transforming Assessments

Competent instructors are known to be resourceful with the ability to help students think. The purpose of learning is reflected in the education theories of Freud, Lewin and Tolman, where instructors know how to intervene where students are more concern about avoiding failure than achieving success (Atkinson, 1964). An exploratory study by a lecturer on transforming assessments claimed that to provide quality continuous assessments Figure 1, depended on the attributes of the instructor (Sharma, 2017).

Figure-1. First term assessment -continuous assessment (Sharma, 2017).

In advancing the development of transforming assessments, education psychologists John Dewey (1986 - 1952), Carl Rogers (1902 - 1987) and David Kolb (1939 - present) established learning theories focused on "learning through experience" that emphasize on learning by doing. These learning theories are also relevant in the design of continuous assessments specifically in the development of 21CS. The theories provide that learning is a process to create knowledge resulting from the transformation of experience where students who are engaged will develop self-regulated learning. Kolb's Experiential Learning Model (ELM) Figure 2, describes the learning spiral based on concrete experience, reflective observation, abstract conceptualisation and active experimentation. The learning theories continue to be useful for instructors to apply in transforming assessments for 21CS development. Instructors are also reminded of the classical theory of achievement motivation, in that students' interpret achievement to learning and career readiness based on grades and performance as a lack or an abundance of failure (Atkinson, 1964).

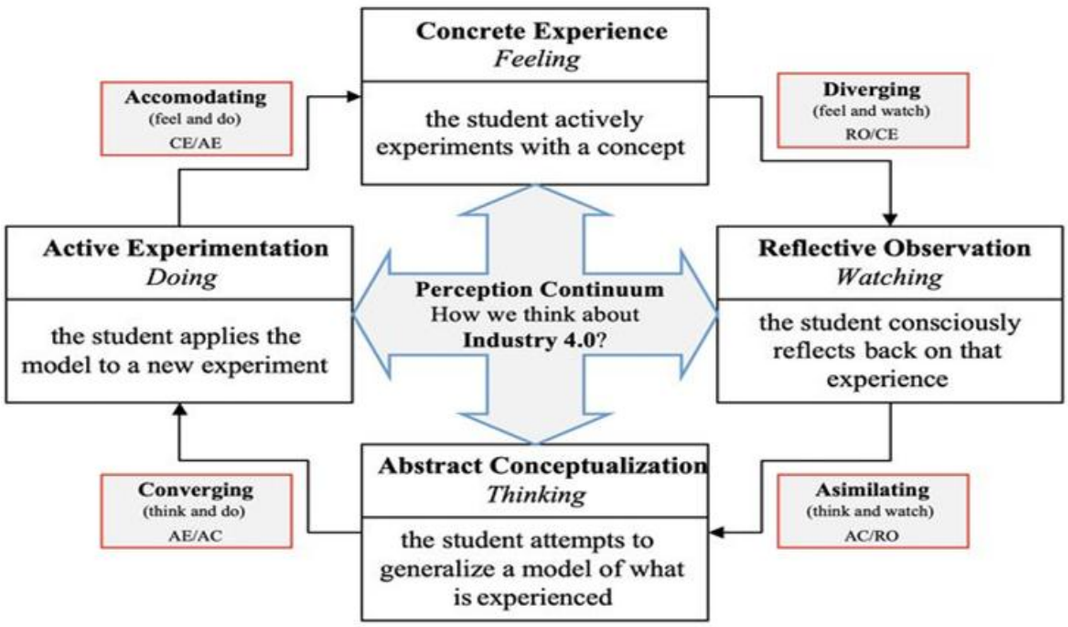

Figure-2. Kolb's learning styles model and experiential learning theory.
Source: Experiential Learning: Experiences as the source of learning and development (1984).

2.2. Conceptual Framework: Creating Value in Transforming Assessments

Abdul (2017) observed that the education reformation initiatives in Malaysia did not address the possibility that the knowledge learned can become obsolete by the time students graduate. In addressing a solution, Parameswaran and Suresh (2015) concluded that the PHEI education system as a whole will need to be inclusive by inviting private sector participation as the demand for 21CS competencies become more industry specific. For learning to remain relevant it necessitates conceptualising the value chain in education Figure 3. The value chain is a business management concept in identifying the activities to be carried out to create value for its customers (Porter *et al.*, 2012). The goal of a value chain is to create competitive advantage for the businesses by delivering the most value for the least cost (Carla, 2019). Creating the value chain is necessary to develop mutually beneficial objectives between the PHEIs and the private sector. Partnerships reflective of the value chain will enable the teaching and learning to meet the changing 21CS needs in Industry 4.0. Shared value partnerships will ensure continuous development in transforming assessments, aligned to the changing work skill needs of the private sector.

In recognising the teachers' role as change catalysts, the Ministry of Education (MOE) has called on teachers to embrace these challenges, with a reminder that transformation begins in the classroom. In the Malaysian Education Blue Print (2015 – 2025) the theme "Higher Education 4.0: Knowledge, Industry, Humanity" addresses Industry 4.0 impact on jobs, industry and humanity (Rajaendram, 2018). The call was for stakeholders to prepare to evolve and adapt to the demands of Industry 4.0 by offering authentic learning experiences that simulate real-world challenges. New learning approaches in heutagogy, cybergogy and paragogy along with alternative forms of assessments are needed in the transformation (Rajaendram, 2018).

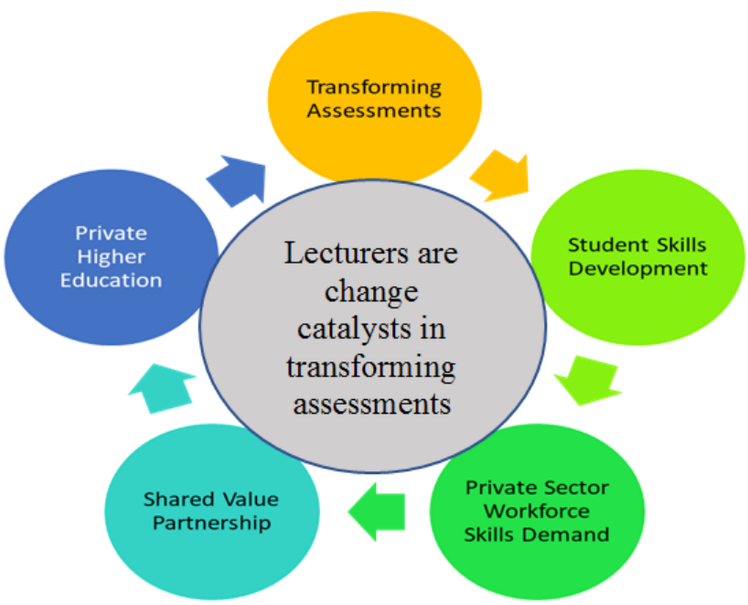

Figure-3. Conceptual framework: Value chain for transforming assessments.

2.3. Challenges in Transforming Assessments

It is important to prepare for Industry 4.0, and to address the concern by the private sector in Malaysia that fresh graduates are not skilled for the workplace. The gap can lead to unemployment and a shortage in skilled labour in the future. An article on 21CS development challenges suggested that due to the absence of clarity there was inconsistency and tension in the assessment practice (Care *et al.*, 2019). In another article on the future work

skills, the observation was that the Malaysian government faced strong challenges to change the mindset of Malaysians who prioritised examination and rote learning (Oxford Business Group, 2018).

The "Malaysian Mandate for Higher Learning (HE 4.0): Knowledge, Industry and Humanity" encourages the adoption of new learning and teaching technologies that break away from traditional class lectures. Planning for the transformation of assessments is crucial and the implementation needs to begin in continuous assessments involving multiple formative and summative assessments throughout the duration of a course. The transformation calls for a re-evaluation of assessments with less focus on examinations. In suggesting a solution, Maizatul (2018) claimed that the objective is to encourage academia and industry to work as education partners in ensuring that the nation produces the needed skilled workforce for Industry 4.0. This will require stakeholders to evolve and adapt to a fluid and organic curriculum to facilitate redesigning the learning outcomes to changes in the skills need within the industries. Rajaendram (2018) suggestion was for alternative types of assessments such as real-time assessments and authentic assessments to measure proficiency more than knowledge, to be introduced. To be actively engaged in the education process, the stakeholders' will have to recognise and value the use alternative forms of assessments to gauge students' capability. The shift will require the stakeholders' commitment to establish a measurable criterion in improving the shared value partnership.

3. Methodology

This methodology is selected to assess the fit between purpose and method in deciding to use a qualitative approach determined by the research question and purpose (Yin, 2009; Richards and Morse, 2012; Maxwell, 2013). A case study protocol was used for the study design and content (Yin, 2009; Creswell and Poth, 2018). Based on an epistemological belief through a social constructivist interpretive framework, a case study approach was used to co-construct the reality shaped by the course lecturers' challenges experienced in transforming assessments. Using purposeful sampling, two (2) business lecturers with over five (5) years of teaching experience and familiar with the Diploma standards were selected from a PHEI. Their continuous assessments required students to be involved in business and community activities. A direct interpretation approach was used for the data analysis which involved establishing patterns and relationships by pattern matching the theoretical realm and observational realm (Wolcott, 1994b; Yin, 2009; Creswell and Poth, 2018). To identify the patterned regularities and to count the frequency of code, the Qualitative Data Analysis Software (QDAS) Nvivo 12 was used.

3.1. Instrumentation

The instrumentation includes semi-structured interview, document reviews and audiovisual materials. The semi-structured interview was used because qualitative interview data provides indepth insights on participant attitudes, thoughts, and actions (Creswell and Poth, 2018). The interview questions were vetted by an external expert to ensure reliability. Documents reviews include the lecturers' course files, course outline, mapping of course objectives to programme outcomes, mapping of assessment tasks to learning domains and soft skills, assignment briefs and rubrics. Audiovisual materials include online visuals and students' peer-to-peer interactions online using Padlet, Kahoot and Quizlet (Web 2.0 technology) and the Blackboard (LMS) in teaching and learning.

4. Findings

Table-1. Reduction of interview transcript to themes.

Participants	Academic competency	Challenges in transforming assessments
Lecturer 1	Pedagogy Industry 4.0 21CS Experiential & Blended learning	# Notes specific for assessments # English literacy # Reflective thinking # Critical thinking # Group think # Marks
Lecturer 2	Pedagogy Industry 4.0 21CS Experiential & Blended learning	# Limited world view # Lack curiosity # One-off collaborations # Resources constrains # Peer pressure # Communication

Source: Semi-structured lecturer interviews.

The Observational Realm. The results show the challenges faced by the two (2) lecturers in transforming assessments in developing 21CS. Both lecturers had worked their assessments separately for different classes and present the experiences and challenges faced in transforming the assessments in Table 1.

The Theoretical Realm. In content analysis, information is reduced to identify patterned regularities and to count frequency of codes (Wolcott, 1994b; Yin, 2009; Creswell and Poth, 2018). The outcome of the auto code pattern results identify patterned regularities Figure 4 based on coding multiple sources to a case note (Wolcott, 1994b). The patterned regularity between challenges and transforming assessments is the highest and lowest between 21CS development and education provider Figure 4.

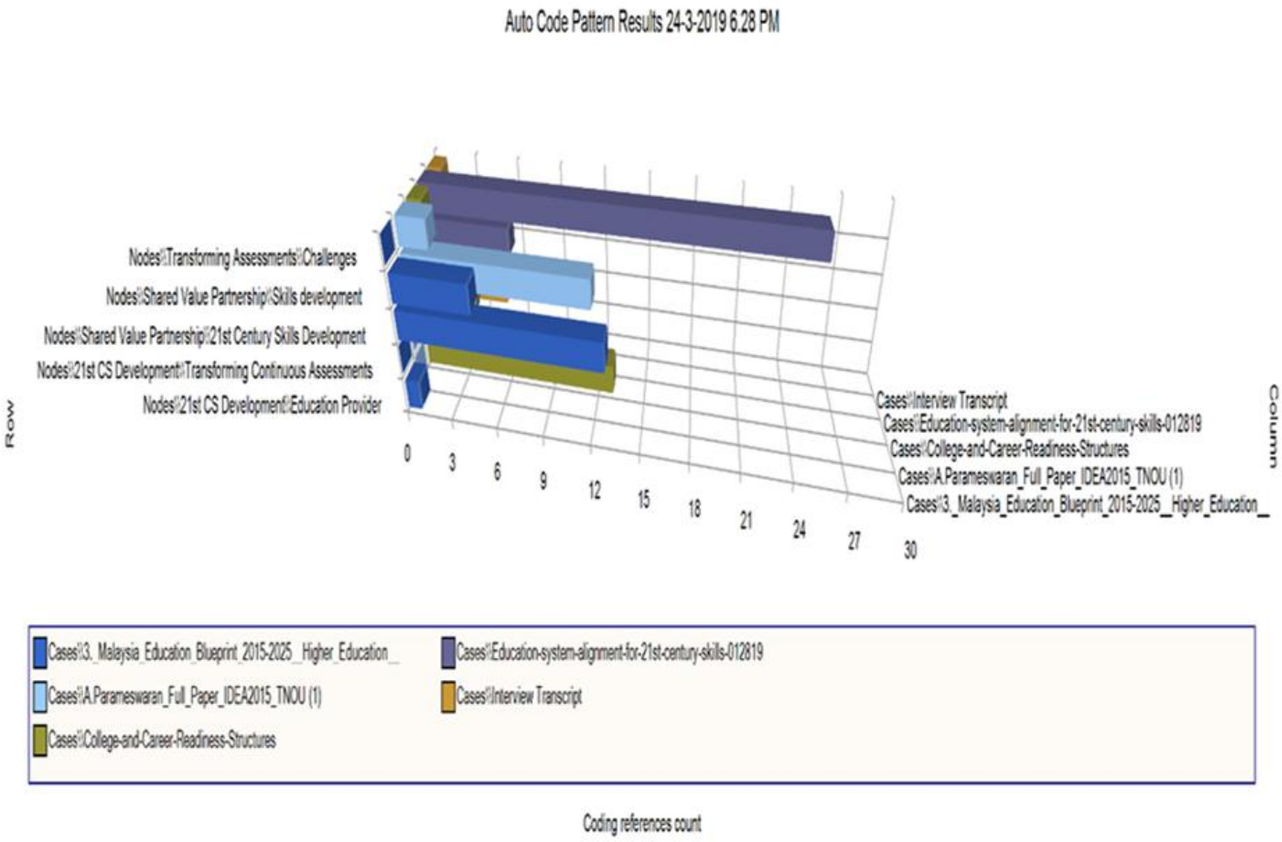

Figure-4. Auto code pattern results for multiple sources to a case node.

Based on the pattern matching between the theoretical realm and observational realm the challenges to transforming assessments for 21CS development include:

1. Stakeholders' reliance on academic results to perceive students' 21CS competencies.
2. Stakeholders are more likely to work in short-term partnerships to avoid conflicts.
3. Shared value partnerships in 21CS development is not new but it lacks mutual objectives.
4. Readiness to transform assessments from measuring knowledge attained to measuring applied proficiency to develop 21CS is constrained by the lack of awareness and know-how.
5. Students' rely on lecturers as knowledge providers.
6. Resources constrain can delay new technology adoption in PHEIs.

The challenges faced by the lecturers reflect that the skills gap perceived are a result of a general lack of recognition and value to developing 21CS. This is due to unclear stakeholder expectations which can be resolved by establishing mutually agreed upon objectives. Further research is recommended as these findings are limited to the extend of generalisation based on a single case analysis from the perspectives of lecturers (Creswell and Poth, 2018).

5. Discussion and Conclusion

The study shows that while there is effort within the PHEI to develop 21CS, the view is not shared by the private sector. The recommendation is to address the challenges in transforming assessments for 21CS development through strategic shared value partnerships between the PHEI and the private sector to ensure that the development of 21CS remain relevant. Stakeholders must be willing to evolve and adapt through mutually beneficial objectives to address the future workforce skills mismatch. Hays Global Skills Index (2018) revealed that Malaysia was experiencing a shortage of skilled talents despite the strong job market in all sectors. The report also stated that the degree of skills mismatch was unable due to data unavailability. This indicates that shared value partnerships based on the principle of mutual exchange linked to sustainable social and business issues and results is new in Malaysia.

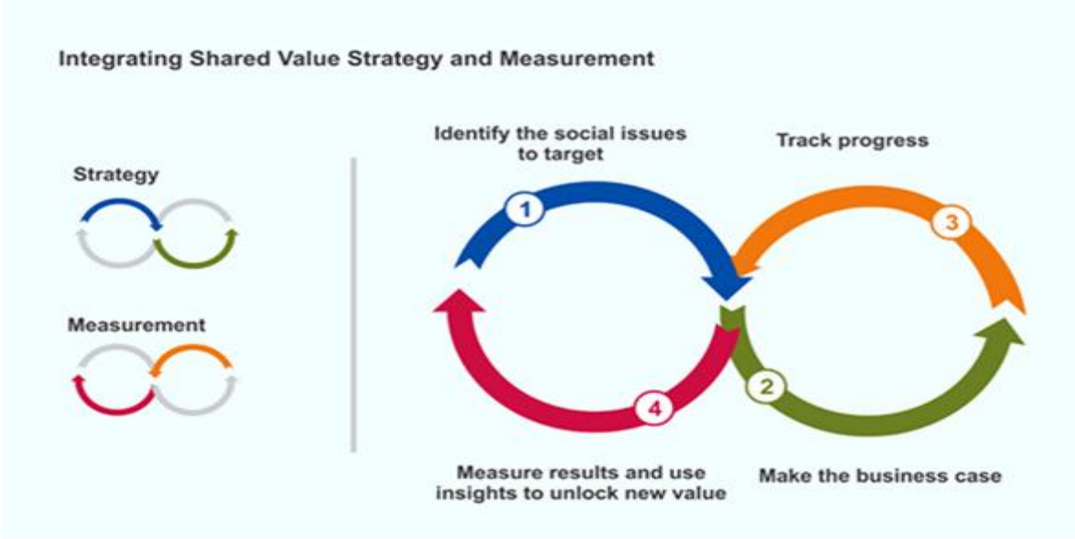

Figure-5. Integrated shared value strategy and measurement.

Lecturers as catalysts play an integral role in activating the assessments transformation to improve the development of 21CS to realise the Mandate, "Higher Education 4.0: Knowledge, Industry and Humanity" (Ministry of Higher Education, 2018). To measure shared value Figure 5 is to unlock the values that are linked to the social and business results (Porter *et al*., 2012). The recommendation is for assessments to be transformed based on the demands from the private sector, to keep up with the changing skills need for businesses to increase profits and competitive advantage in Industry 4.0. Further studies on shared value partnership initiatives between PHEIs and the private sector will ensure that the development of 21CS are to the purpose of SDG 2030 in developing the digital economy.

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