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Challenges of Problem-Based Learning in Post-Covid-19 Workplace: Evidence from Sylhet

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Abstract
The study aims to investigate the challenges of problem-based learning in the post-Covid-19 pandemic. The study also highlighted the situation of employees in the Covid-19 pandemic regarding psychological and financial issues and also assessed the attainability of challenges of employees in the post-Covid-19 new normal era. The study is descriptive in nature and a quantitative approach was adopted in this study. A structured questionnaire was chosen to examine the challenges of problem-based learning in the post-Covid-19 workplace. The respondents of the research were taken by the convenience sampling method (non-probability sampling technique) and the population is executives, senior executives, and managers from different IT sectors, hospitality industry, and banking sector. The study highlighted that uncertainty in future plans, remarkable changes in the world economy, innovative plans, and strategies for communications, and aspirations for adopting new circumstances are the leading challenges of problem-based learning in post-Covid-19 workplaces. The study also reveals that terrific employee stress in the new normal era, vulnerable economic and social structure, and improper human capital development were the biggest issues in the employees' situation during the Covid-19 pandemic regarding psychological and financial issues. The logistic regression revealed that challenges of problem-based learning in post-Covid-19 in the workplace are attainable. The study also recommends that new competencies are necessary to face new normal issues, and organizations should invest more in research and development to identify the required competencies to adjust problem-based learning.
Keywords: Problem-Based Learning, Post-Covid-19, IT Sector, Hospitality Industry, Banking Sector, Sylhet
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1. Introduction

The emergence of the Covid-19 pandemic has brought out cabalistic changes in the way we live in today's world. Numerous theoretical, as well as organizational issues, have come to light as mandatory for keeping pace with the post-Covid-19 pandemic business era. The concept of problem-based learning is one of them, which concentrates on identifying the most empirical attainment for a particular problem depending on research applications (Savery, 2006).

Though the concept was first originated as a dynamic educational approach in the field of medical science, soon it got recognition in multidimensional sectors such as business industries, political economy, law, social sciences, etc. (Barrows, 1996). If we analyze the different definitions of problem-based learning, as proposed by different researchers, three cornerstones of this concept can be identified, such theoretic disciplines, pedagogical diagrams, and multiple practices (which are supposed to be the most fruitful and effective ones) based on the conventional educational models (Graaff & Kolmos, 2003). In terms of a workplace context, the approach can be defined as a method of communicative edification, which is driven by practical problem scenarios, group collaboration, spontaneous reflections, and collaborative sharing, where the actual objective is to diagnose the most realistic solution to the workplace difficulties and challenges (Yeo, 2008). Therefore, the implication of problem-based learning approach cannot be denied in terms of flourishing the human resources of an organization.

Human resources are considered to be the most crucial element for ensuring the sustainable development of a corporate organization and also for achieving competitive advantage in the modern world. This becomes possible only when these vibrant resources are equipped with bountiful learning and growth opportunities. After being recruited, employees are generally exposed to several formal and informal training sessions. But it was revealed from previous research that merely 20% of employees' learning takes place through formal training processes (Marsick & Watkins, 1990). The same study also indicated that employees prefer to involve in individual strategies for performing their duties and responsibilities, for example, through noticing, listening,

studying, observing, asking questions, and realizing their work atmosphere as components of problem-solving methods (Marsick & Watkins, 1990). More significant finding is that the majority (80%) of staff learning takes place with the help of informal sessions, that are unintended and by nature include self-exercise, self-driven learning, networking and communications, action planning, etc. (Marsick & Watkins, 1990).

Besides, learning and knowledge sharing along with colleagues and associates are found to be strong motivators of workplace learning where the mentor plays the preface of a facilitator by rendering sufficient amenities for practical expositions (Stonyer & Marshall, 2002). Employees' learning process becomes more feasible and impassioned when it happens concurrently when it is related to actual situations, and when it is attached to their regular job functions (Stonyer & Marshall, 2002; Lohman, 2002; Poikela, 2004).

The concept of problem-based learning is mainly dependent on such exercises where the learning process is supposed to be stimulated through problem resolution and investigations (Bridges, 1992). Another study revealed that problem-based learning and workplace learning are greatly correlated, as problem-based learning supports workplace learning by initiating informal learning mechanisms (Yeo, 2005).

Employees can involve themselves in integrative rapport and multipurpose performances based on experiencing realistic and shared problem situations, which in turn, contribute to the process of socialization of the workforce (Yeo, 2008). For ensuring such contribution, the human resource division of an organization also has magnificent roles to play. Especially in the Covid-19 situation, they need to develop artistic communication policies, multi-dimensional networking facilities, and appropriate learning mechanisms for their subordinates, so that the core values and principles of the problem-based learning concept can be applied practically (Yeo, 2008). Hence the employees of a firm require suitable opportunities to spontaneously collaborate, participate, develop and share knowledge with the surrounding others. Potential direction, guidance, sufficient award, and acknowledgment from organizations are crucial for acquiring the full-term benefits of a problem-based learning approach (Yeo, 2005).

The Covid-19 pandemic affected many workplaces to adapt to severe changes in the work ecosystem around the world. Despite the changes in the previous years in relevance to new knowledge and digitization, the unforeseen changes of the pandemic require sharp learning. As the world emerges from the lockdown, more collaborative approaches to solving difficult problems are needed. Therefore, this paper investigates the challenges of problem-based learning in the post-Covid-19 pandemic, which is known as the new normal era. The study also highlighted the situation of employees in the Covid-19 pandemic regarding psychological and financial issues and also assess the attainability of challenges of employees in the post-Covid-19 new normal era.

In the Covid-19 pandemic situation, today's organizations and managers can utilize this approach as a weapon of informal learning that can systematically support the cognitive enhancement of each employee as well as the sustainable growth of an institution (Yeo, 2008). Therefore, this topic requires thorough research and investigations for further successful application in the competitive business world, especially considering the present post-Covid-19 phenomenon, when every organizational entity is striving hard to defend its subsistence.

2. Literature Review

2.1 Problem Based Learning

Problem-based learning can be defined as problem-solving capabilities, developing critical thinking skills and communication skills (Hung, 2011). Problem-based learning is a bit different from the direct learning method. Working to solve a real-world problem based on action research is called problem-based learning (Cotič & Zuljan, 2009). However, problem-based learning was incepted by Howard S. Barrows and Robyn M. Tamblyn at McMaster University in Hamilton in the 1960s (Barrows & Tamblyn, 1996). They have suggested that problem-based learning will expose real-world challenges, apply higher-order thinking skills, interdisciplinary learning, information mining skills, teamwork, etc. According to (Mohrman & Worley, 2009) problem-based learning process involves a systematic method for solving problems or meeting challenges that arise in the environment. It is beyond lecture method learning. Traditional learning and problem-based learning have a clear difference. Traditional learning is composed of three steps: identifying and presenting relevant material, informing what needs to be done, and providing details on how to apply knowledge. In contrast, problem-based learning indicates playing the role of facilitator. It is also comprised of three steps: diagnose the problem, identify what we need to know to solve the problem, and then learn and apply relevant knowledge to solve a particular problem (Kurt, 2020). Problem-based learning does not merely focus on problem-solving but permits collaborative efforts, knowledge acquisition and sharing, and communication (Marshall, Yamada, & Inada, 2008). Problem based learning assimilates with inquiry-based learning to bring practical solutions.

Problem-based learning has great significance to organizational development. It is called inquiry-based learning (McLoone, Lawlor, & Meehan, 2016) and it helps develop rich cognitive knowledge (Harden & Davis, 1998). Problem-based learning encourages sensitivity training (T-group training). In sensitivity training, participants learn through interaction with each other (Noe, 2019). They also used to share ideas, knowledge, role-playing behavior, and feedback. It increases people's problem-solving skills, interpersonal relations,

teamwork, and collaboration (Brata & Mahatmaharti, 2019).

2.2 Post Covid-19 New Normal

New normal is a previously unfamiliar behavior or situation that has become accepted and standard in society or organization (Lester, Cho, & Lochmiller, 2020). The new normal is to adapt to our changing world, whereas extensive research and development is required. Turning research into action to make an optimistic, safe and harmless future for our society (Bryan, 2021). Working from home or attending business meetings or seminars via the internet reflects new normal (Donthu & Gustafsson, 2020). New normal has multiple behavioral, mental, and financial effects on business. It also interrupts organizational structure and creates a ripple effect of human capital. The new normal demand for the ergonomic design of business is the fundamental rethinking of business processes and models (Marmaras & Nathanael, 2005). Coronavirus disease (Covid-19) stimulates massively to embrace new normal. Great flexibility is required for new normal and problem-based learning because **it makes all parts of our lives messy together** (Mallory, 2021)**.**

2.3 Challenges of Post-Covid-19 New Normal Era

In the Covid-19 pandemic, concerns about employees' work-life issues have grown. Employees are worried about their job security and career growth. Covid-19 pandemic enlarges the employees' psychological pressure that is making their workplace toxic (Norman & Schmidt, 1992). The world economy will have a notable change in a few years because of the Covid-19. In this new normal, employees and organizations should develop new socio-economical and communication plans for securing sustained competitive advantage (Hmelo-Silver, 2004). However, business organizations need to develop new security policies and techniques to fight against the new normal adjustment in business environment. A new crisis is being placed for environmental change, and these new crises convey new hope and opportunities for the future (Sherwood, 2004). Employees will learn how to adjust and react to the new environment to showcase their problem-solving and decision-making skills, critical thinking, and leadership. Soft skills are taking place of hard skills to meet the demand of the new normal. In addition, organizations and people need to discover their own path to fight the Covid-19 pandemic issues to retain themselves in the modern business arena.

2.4 Psychological and Financial Effects in Covid-19 Pandemic Situation

The Covid-19 pandemic has numerous psychological and financial effects (Jaafari, 2003). It may have introduced adverse behavioral and anxiety symptoms among employees. Symptoms include a fall in work performance, stress, depression, and sleeping disorders. Problem-based learning always encourages embracing change, and at the same time, inherently, people try to oppose change (Conlon, 2004). People may create resistance to change for many reasons; for example, it reduces employees' jobs and financial security. Fear of inadaptability or unknown and selective knowledge possession is a prime cause to prevent change (Billett, 1996). The first and second waves of Covid-19 drastically damaged the business organization's growth, especially those that have factory-based production. During the Covid-19 pandemic, many organizations, whether employees or plants, went through downsizing strategies. As a result, employees and organization lose their financial growth and security, and it must have psychological pressure on them. Psychological issues, such as anxiety, stress, depression, etc., have a terrific effect on human and social capital (Hung, Bailey, & Jonassen, 2003). Employees' knowledge, skills, and abilities may vary based on their psychological status. An anxious and depressed employee cannot perform better to achieve organizational goals (Sungur & Tekkaya, 2006).

2.5 Requirements of Problem Solving in Post Covid-19

The global Covid-19 pandemic situation has had numerous upsetting effects on human life. Competency lacking is creating many challenges in problem-based learning and new normal (Brundage & Koziel, 2010). Facing new problems requires new competencies. Human capital, such as skills, knowledge, and abilities, are required to face and tackle problems (Noe, 2019). Another challenge is collating and understanding available information to create a new form of knowledge. The problem-based learning approach includes three types of capabilities such as i) generic capabilities, ii) intellectual capabilities and iii) working together capabilities (Meister, 2020). Generic capabilities are critical thinking and problem solving, adaptability, self-managed learning, teamwork, interpersonal skills, etc. For achieving the above three capabilities organizations should go through rising higher-order and thought-provoking questions (Wang, Hutchins, & Garavan, 2009). Case studies and problem-based learning could change and identify and determine any information needs. This style helps to notify new normal prerequisites and improve what enhances the knowledge capacity (Carder, Willingham, & Bibb, 2001). Researcher (Newman, 2005) suggested eight tasks for implementing problem-based learning, whether it is post Covid-19 or furthermore, such as problem exploring, identifying the basic knowledge regarding the problem, formulating ideas about what we need to know, setting priorities, goals, and objectives, search for knowledge, group discussion, applying knowledge, and finally identify what has been learned.

2.6 Workplace Requirement in New Normal Era and Problem Based Learning

The workplace has been affected by the pandemic drastically. New skills such as soft skills are needed to succeed in a post Covid-19 business world. Leadership, flexibility and adaptability, emotional intelligence, critical thinking and problem-solving skills, innovation and communication skills are needed to adjust to the new normal (Stephanie, 2021). New normal have an obvious impact on our psychological, social, and economy (Xiong, et al., 2020). It leads to people's anxiety and depression. Work-life balancing or organizational help to manage dual-career couples can better minimize employee anxiety and depression (Webster & White, 2010). Copying flexibility to the situation of Covid-19 is valuable for mitigating shock. In Covid-19 ergonomic workplace design is crucial. It aims to improve work performance by minimizing physical efforts and workload, and psychological constraints, guaranteeing occupational health and safety and equal employment opportunity (Buheji & Buheji, 2020). In addition, workplace designing defines creating a healthy work environment by ensuring proper air ventilation, humidity, lighting, workplace layout, established equipment, etc. (Mendis, 2016). Besides the workplace, designing a harmonious relationship with supervisors, colleagues, and peers is vital for organizational development.

3. Research Methodology

Due to its descriptive nature, a quantitative approach was adopted for this study. The quantitative research is appropriate to describe characteristic of the population and the phenomenon being studied. A structured questionnaire was chosen to study the employee perception on problem-based learning in workplace in post Covid-19 situation. The Sylhet city is selected as a research site as nearly all of the offices, businesses, and industries of Sylhet. In order to gain the reliable information on the challenges of employees on problem-based learning in the workplace, many executives, senior executives, and managers were approached who fill up the questionnaire with a face-to-face interview.

The respondents of the research were taken by the convenience sampling method (non-probability sampling technique) and the population are executives, senior executives, and managers from different IT sector, hospitality industry, and banking sector. The research was conducted in the timeline of September 2021 to January 2022 and pretest of the questionnaire was conducted in September 2021 among 15 respondents. The participants in the study were not coerced in any form and all of their data and information remains anonymous. The data of the research coded and analyzed through the Statistical Package for the Social Science on Cataline (macOS 10.15).

4. Data Analysis and Findings

4.1 Demographic Profile of the Respondents

The respondents' demographic profile will help to better understand the challenges of employees on problem-based learning in the workplace post-Covid-19. In this research paper, four different industries from Sylhet city have been carefully chosen: travel agency, restaurant and accommodation, IT sector, banking, and other financial institutions. Along with gender and age group, we also added respondents' job positions and work experience in their current position to get the best insight. **Table- 1** highlights the respondent's overall demographic profile.

Table 1. Demographic Profile

	Frequency	Percent
Gender:		
Male	95	76.0
Female	30	24.0
Total:	125	100.0
Age group:		
20-30	21	16.8
30-40	55	44.0
40-50	29	23.2
>50	20	16.0
Total	125	100.0
Position:		
Executive	42	33.6
Senior Executive	49	39.2
Manager	18	14.4
Others	16	12.8
Total	125	100.0
Experience in current position:		
1-5 years	27	21.6
5-10 years	54	43.2
10-15 years	32	25.6
>15 years	12	9.6
Total	125	100.0
Industry:		
Travel agency	16	12.8
Hospitality industry	43	34.4
IT sector	15	12.0
Banking and other Financial Institutions	51	40.8
Total	125	100.0

Among the 125 respondents, the male employees were 76 percent, and females were 24 percent. That's indicating almost one-third of the respondents were female, and it is a decent number from the small city where we conducted our research. Respondent's age groups were categorized into four groups, and the highest participant's age was in-between 30 – 40, that is 44 percent. Besides that, we have collected data from different job positions, namely executive 33.6 percent, senior executives 39.2, managers 14.4, and others 12.8 percent. Here, most respondents were executives and senior executive level individuals. Similarly, different levels of experienced employees were covered in this paper. The above table showed that a substantial number of respondents' job tenure was 5-10 years, 43.2 percent of the total percentage. Moreover, our respondents were drawn from different industries to get the best output to know the challenges of employees on problem-based learning in the workplace post-Covid-19 from the Sylhet region. 12.8 percent of respondents came from the travel agency, 34.4 percent from the hospitality industry, 12.0 from the IT sector, and a large number of respondents, 40.8 percent drawn from banking and other financial institutions.

4.2 Challenges of Employees in Problem-based Learning in post-Covid-19 New Normal Era

The table reveals the mean value and standard deviations of different variables identified for analyzing the challenges faced by employees in post-Covid-19 in the new normal era. The mean values of employee challenges ranged between scores 2 and 3, indicating that most employees agreed on facing challenges in the post-Covid-19 new normal era. The table represents that employees are agreed on finding aspirations for adopting new circumstances from the post-Covid-19 new normal era (Mean 3.95 and Std. Deviation 1.007).

Table 2. Challenges of Employees in Problem-based Learning in post-Covid-19 New Normal Era

	Mean	Std. Deviation
Uncertainty in future plans	3.66	.943
Substantial growth in future	2.83	1.022
Remarkable changes in the world economy	3.90	.974
Innovative plan and strategies for communications	3.54	.963
New security policies and techniques to protect business	3.46	1.118
Emphasis on new opportunities	3.46	1.066
Aspirations for adopting new circumstances	3.95	1.007

On the contrary, employees disagreed with the fact that there are possibilities of substantial growth in the future after Covid-19 new normal life (Mean 2.83 and Std. Deviation 1.022). Employees believed that there were remarkable changes in the world economy during the Covid-19 pandemic (Mean 3.90 and Std. Deviation 0.974). Employees also agreed that there is no certainty in planning for the future (Mean 3.66 and Std. Deviation 0.943), but they believed there should be innovative plans and strategies for the communication system (Mean 3.54 and Std. Deviation 0.963). The necessity of new security policies and techniques to protect business (Mean 3.46 and Std. Deviation 1.118) is a significant factor in adopting post-Covid-19 work-life, which leads to an emphasis on new opportunities (Mean 3.46 and Std. Deviation 1.066) for every business organization.

4.3 Employees' Situation in Covid-19 Pandemic Regarding Psychological and Financial Issues

The table highlighted the mean value and standard deviations of different variables identified for analyzing employees' situations in the Covid-19 pandemic regarding psychological and financial issues. The table indicates that employees agreed that there is improper progress on human capital development (Mean 3.78 and Std. Deviation 1.140). The study also found a vulnerability in the economic and social structure (Mean 3.78 and Std. Deviation 1.013) in the Covid-19 pandemic.

Table 3. Employees' Situation in Covid-19 Pandemic Regarding Psychological and Financial Issues

	Mean	Std. Deviation
Adverse behavioral and anxiety symptoms	3.30	1.138
Terrific employee stress	3.56	1.050
Distasteful mental and financial impact	3.47	1.044
Vulnerable economic and social structure	3.78	1.013
Interruption of organizational structure	3.58	1.213
Improper human capital development	3.78	1.140

The interruption in organizational structure (Mean 3.58 and Std. Deviation 1.213) is causing severe financial problems to the employees, which in return pausing terrific stress (Mean 3.56 and Std. Deviation 1.050) on them. Distasteful mental and financial impact (Mean 3.47 and Std. Deviation 1.044) and adverse behavioral and anxiety symptoms (Mean 3.30 and Std. Deviation 1.138) are also significant factors in evaluating an employee's situation during the Covid-19 pandemic in both psychological and financial matters.

4.4 Challenges of Employees are Attainable in Post-Covid-19 New Normal Era

The result of measuring the impact of challenges on employees is attainable in the post-Covid-19 new normal era were in this study. The dependent variable was the index value of employee challenges in post-Covid-19 from field data, and the dependent variable or outcome was a binary variable. Where in Statistical Package for the Social Sciences (SPSS) data were coded as "Yes = 1" that is challenges of employees are attainable in the post-Covid-19 new normal era and as "No = 0" that is challenges of employees are not attainable in the post-Covid-19 new normal era.

Eighty-nine employees of the different organizations are found to believe that challenges of employees are attainable in the post-Covid-19 new normal era, and thirty-six employees believe challenges of employee are not attainable in the post-Covid-19 new normal era. The Statistical Package for the Social Sciences (SPSS) output of the logistics regression is given below:

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Block 0: Beginning Block

Classification Table[a,b]

Observed			Predicted: Challenges of employee are attainable in the post-Covid-19 new normal era		Percentage Correct
			Yes	No	
Step 0	Challenges of employee are attainable in the post-Covid-19 new normal era	Yes	89	0	100.0
		No	36	0	.0
	Overall Percentage				71.2

a. Constant is included in the model.
b. The cut value is .500

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.905	.198	20.999	1	.000	.404

Block 1: Method = Enter

Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	1.317	1	.025
	Block	1.317	1	.025
	Model	1.317	1	.025

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	148.770[a]	.010	.015

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted: Challenges of employee are attainable in the post-Covid-19 new normal era		Percentage Correct
			Yes	No	
Step 1	Challenges of employee are attainable in the post-Covid-19 new normal era	Yes	89	0	100.0
		No	36	0	.0
	Overall Percentage				71.2

a. The cut value is .500

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Challenges of employee in post-Covid-19 new normal era	.511	.451	1.287	1	.025	1.668
	Constant	-2.729	1.630	2.804	1	.054	.065

a. Variable(s) entered on step 1: Challenges of employee in the post-Covid-19 new normal era.

The result shows that challenges of employees in the post-Covid-19 new normal era have a strong significant impact on the challenges of employees that are attainable in the post-Covid-19 new normal era because in both blocks the equation showed standard β and standard error in both blocks were also shown as significant value.

5. Recommendations and Conclusion

This study has flaked some light on the effects of problem-based learning in the new normal era. In the new normal era, organizational development largely depends on how quickly organizations adopt and assess problems by action research. Problem-based learning encourages informal learning and formal learning (Huber, 1991). Organizations can adopt this learning through laboratory or on-the-job training. In the new normal, problem-based learning requirements are to develop human capital and competencies. For instance, workplace context and social and physical factors influence employees' performance and adjustment to new normal issues (Fuller & Unwin, 2004). Management support, interpersonal relations, trust and respect, leadership, work equipment, and environment are important to early adoption of the contents of problem-based learning. The Covid-19 pandemic has changed traditional work methods, which has psychological and financial effects on employees. Today's organizations face cutting-edge innovation dramatically, whereas employees must adjust necessary for organizational development. Teamwork, communication, flexibility and adaptability, emotional intelligence, critical thinking, and problem-solving skills, feedback, etc., are prerequisites for succeeding in problem-based learning (Lohman, 2002).

Employee's adjustment to new normal is not an easy task. It can grow employees' stress, anxiety, and depression levels. Work-life balance and flexibility in learning can be a remedy for organizational development. Moreover, organizations should have set up new plans and strategies to face new normal issues and develop new security policies and techniques to protect business fields that arise from the Covid-19 pandemic. There are some recommendations based on the findings of the study are as follows:

- Problem-based learning, an organization should go through indirect learning that might be a case study. New competencies are necessary to face new normal issues, and competencies must be aligned with the

changing business environment.

- The organization should invest more in research and development to identify the required competencies to adjust problem-based learning. Traditional teamwork, brainstorming, communication, and interpersonal relations might be reordered based on new normal issues.
- Problem-based learning in a new normal era might threaten employees' career growth. Along with formal learning, an organization should initiate second-order learning and arrange proper training programs to develop employees' human capital.
- Employees are the cornerstone of organizational development. Problem-based learning in the new normal might increase employees' stress, depression, and anxiety levels. An organization should design and execute proper training programs so that employees can prepare themselves for new issues.

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