RESEARCH PAPER

Training Humanitarian Workers Through E-Learning during a Pandemic: A Journey Towards a Sustainable World

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ABSTRACT

PURPOSE: Natural disasters due to climate change affect more than two hundred million people every year. Compared to any point in recorded history, a high proportion of the global population has been affected by floods and pandemic in recent years. Notably, the capacity of humanitarian workers through online, blended, and conventional forms of learning is one of the priorities of embedding the Sustainable Development Agenda 2030 (WHO, 2018).

OBJECTIVES: 1. Whether digital mode and face-to-face mode are equally effective in training humanitarian workers? 2. Do humanitarian workers trained through digital mode and face-to-face mood perform equally well academically? 3. Do humanitarian workers trained through digital mode and face-to-face mood perform equally well in a crisis? 4. Do humanitarian workers trained through digital mode and face-to-face mode perform equally well in post-crises aid work?

DESIGN/METHODOLOGY/APPROACH: An online course was developed with the help of a registered nursing college. The course content was based on already established international practices for emergency response in disasters and developed with the help of national nursing council guidelines. The humanitarian workers were selected from one organisation based on convenience sampling and divided into two groups. The first group comprised 48 workers working as primary healthcare providers in these two remote areas of the country. The second group consisted of 34 humanitarian workers working in the same area as primary health workers. The first group was given training through online media, and the second group was given training via the conventional method.

FINDINGS: The mode of education was decoded into dummy variables, 1 for conversation learning and 2 for e-learning. The academic performance of humanitarian workers was obtained from the course teacher, and humanitarian workers' job performance was obtained from the district manager. The internal consistency of the scale was obtained using the alpha reliabilities of the scales. Descriptive statistics tests were also conducted to measure the mean, standard deviation, and correlation between variables. The humanitarian workers trained through e-learning performed well academically compared to the second group. The reasoning is that the workers having e-learning medium had the leverage to study at their own pace and repeat it at their convenience. Both groups were sent to the field during recent floods, and their progress was monitored and compared. The results revealed that both groups performed equally well. However, one group performed well in the psychological care of the vulnerable population.

ORIGINALITY/VALUE OF THE PAPER: These results concluded that we could use an online education mode to train humanitarian workers in remote areas. The E-learning exercise enhanced their psychological resilience as they were directed to use their cognitive abilities instead of team dynamics and social setting behavioural consciousness. However, the humanitarian workers trained through conventional education performed well compared to the first group in post-crisis field activities as they exercised their social setting behaviour. Our study demonstrated that training humanitarian workers through e-learning is as effective as conventional methods. However, there are pros and cons to both training methods. More research and longitudinal research are recommended to generalise the results across all settings.

KEYWORDS: *Humanitarian Workers; E-Learning; Sustainable Development Goals; Life-Saving Relief Assistance; Performance*

INTRODUCTION

Natural disasters due to climate change affect more than two hundred million people every year. Compared to any point in recorded history, a high proportion of the global population has been affected by floods and pandemic in recent years (Saleh *et al*., 2022; Mizutori and Guha-Sapir, 2020). Notably, the capacity of humanitarian workers through online, blended, and conventional forms of learning is one of the priorities of embedding the Sustainable Development Agenda 2030 (WHO, 2018). It is, therefore, a global cause that needs serious effort from not only a single group of countries, developing or developed, but all the signatories of the UN to improve the world through enhancement of humanitarian workers' learning (Pradhan *et al*., 2022). The reliance of international bodies, such as the United Nations and the European Union, on local humanitarian staff to provide life-saving relief assistance in affected areas is continuous. However, national humanitarian staff failed to save many precious lives due to a lack of training (Saleh *et al*., 2022).

There is a clear call from all the international strategic set-ups to initiate multiple educational programmes through which humanitarian workers can contribute to the present conditions of climate-based catastrophes.

In addition to poor attention being paid to the training of humanitarian workers for disaster response, the World Health Organization (WHO) and the United Nations (UN) reported shortages of humanitarian workers. Therefore, in the era of technology, we argue that the only solution for getting up-to-date knowledge, capabilities, and skills in lifelong learning is through virtual platforms (Pradhan *et al*., 2022). A well-established primary factor in increasing the efficiency and effectiveness of humanitarian aid operations is only possible with highly trained humanitarian workers with the relevant technical capacity. We can train humanitarian workers to better respond in crises with limited resources through e-learning. Notably, the capacity of humanitarian workers through online, blended and conventional forms of learning is one of the priorities through embedding the UN SDGs and 2030 Agenda (WHO, 2018). It is, therefore, a global cause that needs serious effort from not only a single group of countries, developing or developed, but all the signatories of the UN to improve the world through enhancement of humanitarian workers' learning. In this respect, e-learning mechanisms and courses for capacity building for humanitarian workers to deal with floods, earthquakes and related humanitarian crises management are considered vital. Research has shown that these courses need to be developed on an emergency basis by following the philosophy of being agile and resilient (Pradhan *et al*., 2022).

The overall impact of floods and other catastrophic climate-based humanitarian disruptions are causing enormous socio-economic challenges where the need for a resilient humanitarian workforce is eminent (Mizutori and Guha-Sapir, 2020). Numerous studies have already shown the need for learning-backed capacity building. However, few studies have focused on the impact and vitality of learning (online, offline and beyond) mechanisms that can develop the currently relevant capacity of humanitarian workers (Pradhan *et al*., 2022). Humanitarian workers are at the forefront of any emergency-based situation caused by climatic conditions, which defines their job. The inherent risks of change in capacity and competency demand shape the frequency at which new learning resources are required to keep up with disruptive change. The situations in flood and other climate-based emergencies are not the same from each angle, and the humanitarian workers have tremendous moral and professional pressure to their jobs with all the associated risks (Bertini, 2018). The present need for proactive readiness in capacity and competency development makes it crystal clear to all the stakeholders at national and international level that the need for relevant learning mechanisms through approved courses provided by online or offline media is urgent. Online courses for health workers need to be recognised by a renowned body, and they need to be taught rigorously to enable humanitarian workers in this age of pandemics.

In addition to poor attention to the training of humanitarian workers for disaster response, the WHO and the UN reported shortages of humanitarian workers. Therefore, in the era of technology, we argue that the only solution for getting up-to-date knowledge, capabilities, and skills in lifelong learning is through virtual platforms. A well-established primary factor in increasing the efficiency and effectiveness of humanitarian aid operations is only possible with highly trained humanitarian workers with the relevant technical capacity. With limited resources, we can train humanitarian workers to better respond in crises through e-learning.

OBJECTIVES
The objectives of this paper are to answer the following questions:

1. Whether digital mode and face-to-face mode are equally effective in training humanitarian workers?
2. Do humanitarian workers trained through digital mode and face-to-face mode perform equally well academically?
3. Do humanitarian workers trained through digital mode and face-to-face mode perform equally well in a crisis?
4. Do humanitarian workers trained through digital mode and face-to-face mode perform equally well in post-crises aid work?

LITERATURE REVIEW
The literature comprises bibliometric analysis and literary synthesis for argumentation development for the hypothesis.

BIBLIOMETRIC ANALYSIS
The bibliometric analysis was undertaken on the 119 articles and conference papers sourced from Scopus by checking the relevant research work by punching the keywords and combinations of online AND learning, e-learning, learning, humanitarian worker, humanitarian employee, humanitarian staff and human resources. The reflections in the subject areas covered in the literature available projects show that 47.2% of the work has been done by combining the social sciences and medicine. Business management is the third leading area, while social sciences take the lead. After business management, computer science and engineering areas depict promising potential. Among the areas not studied well, the nursing dimension is crucial as it is projected apart from medicine and social sciences. Therefore, this area needs to be studied, as illustrated by the subject area data projections (Figure 1).

Documents by subject area
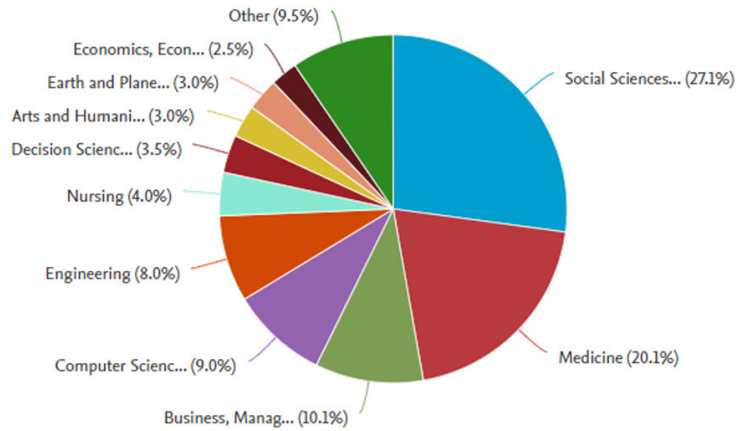
Figure 1: Subject Area Influence on the Problem
Source: Constructed by authors
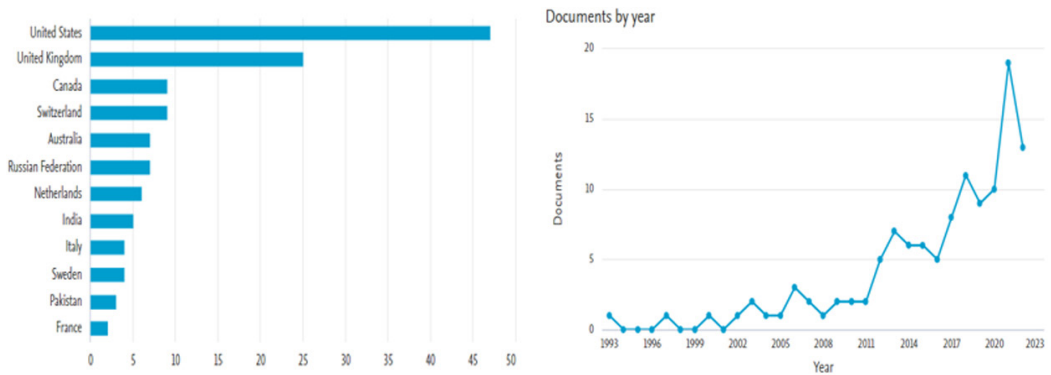
Figure 2: Country Ranking and Research Frequency
Source: Constructed by authors

The left-hand side of Figure 2 above shows that most of the work has been done by researchers residing in the United States (US), and the researcher having the most papers (three) is also from the US. However, it is interesting to note that the Russian Federation is in sixth position, and France and Pakistan are close to each other. The other part of Figure 2 shows that the period after 2016 indicates increased research; the researcher with the most significant number of papers (three)

published in this period. His name is Boudreau, and he worked in engineering while concentrating on humanitarian learning through interdisciplinary sense and role-playing.

All the above bibliometric inferences project that the socio-perspective is dominant in the literature, and the spotlight dimensions are crises, learning, and behaviour. Therefore, humanitarian research demands work on the learning mechanisms in crisis periods that could enhance resilience, which is projected through the behavioural dimension.

A Post-Humanitarian Disruption New-Norm: From 'Work from Home' to 'Online Learning at the Job' for the Humanitarian Worker

The implementation of "Working from Home" (WFH) by office workers, "Study from Home" (SFH) by school students, and "Learning from Home" by campus academic communities, have all caused a significant shift in the daily routine of the common public because of COVID-19. This situation was observed to alter how people behaved daily for a year. After the end of a global vaccination programme in 2021, there was a shift in everyday routines towards "a new normal", in which social distancing is one of the actions that allow direct human engagement to resume while still adhering to health rules. An educational institution depicted an innovative social distancing plan that was visualised and implemented through online learning tools for students to learn social distancing and enjoy learning at the institute. Overall, there was a blended learning approach based on the student's academic level. Those in lower classes were instructed face-to-face, while students of higher classes were instructed online for social distancing (Yudono *et al*., 2021). This projects that online courses and blended learning are required even by educational institutes to make them resilient in terms of engaging with pandemic situations. Therefore, humanitarian workers, being at the forefront of pandemic conditions and flood situations, need capacity-building support through courses developed for online and blended learning modes.

Online Learning and Humanitarian Workers

The Middle East and North Africa (MENA) region is frequently hit by humanitarian disasters. There are few opportunities for humanitarian workers to learn about humanitarian issues, despite their clear and expanding needs. The Humanitarian Leadership Diploma (HLD), a web-based training course designed with aid workers in the MENA area in mind, is the subject of the current study. A mixed-methods approach was utilised to target outcomes at the individual and organisational level, including short- and long-term quantitative and qualitative data. A total of 28 humanitarian workers from the MENA region signed up for the programme from September 2019 to October 2020 and 18 finished the entire diploma. All learners provided short-term quantitative data, such as knowledge assessments, course evaluations, and thoughtful comments, but only those who finished the entire programme, and peers at their organisations six months after completion, provided long-term qualitative data. Themes were reported once the data had been triangulated, qualitative content assessed, and reported.

The programme was generally successful based on various variables indicated by participants, including improved practice, high satisfaction, and increased understanding. However, several significant obstacles were also noted. Themes under the category of strengths were (1) online learning, (2) the importance of a certificate, (3) course material, (4) instructors, (5) the application of what was learned in the field, and (6) personal development. Themes under the challenges heading were (1) obstacles to implementing improvements in performance and behaviour, (2) interaction and engagement, and (3) instructional methods. There are few assessments of locally created and delivered online learning programmes for humanitarian players in the MENA region. The findings are particularly significant because they may guide researchers and humanitarian professionals in designing and implementing similar programmes in the MENA region or other vulnerable areas. Several key recommendations include combining synchronous and asynchronous approaches, designing condensed course materials, limiting theoretical and pedagogical approaches, making sure topics are contextualised to the region, and considering strategies for ongoing learner engagement (Saleh *et al*., 2022). This shows the multiple dimensions of the learning engagement development process that needs to be holistic and integrated.

It has been argued that for teaching advanced clinical reasoning abilities, essential for fostering competence in the health and social services workforce, online learning is challenging. The students were involved in online conversation by adding research projects from the training partners to the range of tasks that students must accomplish. The community and humanitarian studies degree-level programmes at Charles Darwin University in Australia's Northern Territory were provided in a hybrid style that combines in-person and online instruction. Students were given assignments and questions within these modalities of delivery that were taken from our training partners to give learning "real-world applicability". This connection between the academy and practice agency efficiently bridges the gap between the worlds of theory and practice for our students, drawing on examples offered by the practice settings in which students aspire to engage once they graduate. In a community of learning model, students might spend the entire semester working on the projects of local practice partners. An enhanced learning experience is apparent because of the collaboration between academia and front-line social and humanitarian workers. This co-operation strategy promotes opportunities for "deep learning". The effects of involving students from two professions in online activities utilising communities of learning models are examined (Pack, 2013). Therefore, online or offline courses can be accompanied by mentoring and supervision of enriched learning by humanitarian workers.

To advance the professionalisation of the humanitarian sector, the collaborative non-governmental organisation network, ELRHA (Enhancing Learning and Research for Humanitarian Assistance) with headquarters in London, supports collaborations between higher education institutions and humanitarian organisations across the globe. Problems with co-ordination and management of the humanitarian sector have beset every major catastrophe. However, the 2010 Haitian earthquake response brought these issues to light, expediting the need for the competence of an humanitarian healthcare workforce based on competency. To ascertain the unique training

centre preferences and characteristics in the potential professionalisation process, the Harvard Humanitarian Initiative funded an independent survey of recognised scholastically affiliated training centres in North America that provide training for humanitarian health care professionals. The poll found that residential and online programmes offered a common thread of career-specific skills and core humanitarian competencies, with additional programmes providing chances for field simulation experiences and more advanced degree programmes. With the help of ELRHA's regional consultation hubs worldwide, similar academically affiliated and competency-based humanitarian health programmes may organise themselves in the future, assisting and advocating for better education and training opportunities in underdeveloped developing nations (Burkle *et al*., 2013). This clarifies that humanitarian learning today is the responsibility of educational, government and non-government institutions and demands an ecosystem of educational, financial and governance resources.

More than ever, humanitarian workers need to be well-prepared. Clear learning objectives, a curriculum customised to the specifics of humanitarian circumstances, simulation-based training, and evaluation are all crucial to the preparedness process. This publication outlines a training programme created to get medical residents ready for their first field assignment with Médecins Sans Frontières (MSF) and provides the findings of a pilot evaluation of the programme's efficacy. The areas of health, law, public engagement, leadership and management, and task-related skills were covered in training jointly developed by the Research Center in Emergency and Disaster Medicine of the Università del Piemonte Orientale, Novara, Italy, and MSF-Italy. A 3-month distance learning module, a week of instructor-led coaching, and a field placement with MSF made up the blended learning strategy used in this course. The effectiveness was evaluated using the first three levels of Kirkpatrick's training assessment model. There were eight residents in the evaluation. Of all the residents, 3 were female, the median age was 31, and there were 4 emergency medicine residents, 3 anaesthesia residents, and 1 paediatrics resident. Two residents were sent to Pakistan, one to Afghanistan, two to Haiti, one to Iraq, one to the Democratic Republic of the Congo, and one to the MSF Mediterranean search and rescue ship. Typically, a deployment is for three months. The entire course's median score was five on average (excellent). The post-test and residents' overall performance scores showed a considerable improvement. Residents' knowledge and skills improved because of participation in the training programme, and they expressed great satisfaction with the programme (Ripoll-Gallardo *et al*., 2020). Another level of learning can shape into capacity enhancement blocks connected to online course content and teaching, mentoring, placement in the field, and testing and tracking the performance at each stage.

The study's main objective is to examine the potential applications of gamification in learning, and how they may affect employees' acquisition of critical professional skills required in the current context of humanitarian sphere growth. In an experimental study, 40 students from a university in Russia participated. Technology for creating historical interpretations, a 3-month online learning course, featuring a pedagogical paradigm for gamified learning was designed. Social media

information sources, augmented reality, and virtual reality technologies were employed to facilitate the deployment of gamified learning. Students were asked to evaluate the attractive opportunities for the impact of gamified learning on developing critical professional competencies in terms of the degree of influence in a survey conducted on the learning management system platform. The study's findings supported that developing a collaborative, enlarged gaming experience helps learners gain valuable abilities essential for 21st century professionals. The students acknowledged that learning progress was made possible by the efficient management of their learning activities, group switching when developing historical interpretations, and gamification that sparked excitement and positively impacted the desire to achieve the best possible academic outcomes. Because of gamified learning, teachers maintained students' interest in the subject of study. Based on the findings of a student poll conducted at the end of the course, it was determined that gamification in learning has a good impact on the growth of a personality suited to the socio-economic conditions of the 21st century (Moseikina *et al*., 2022). The humanitarian workers should take gamification-backed training, just like other students, and there must be plugging of new technologies to make learning entertaining through gamification.

The fourth industrial revolution pushed the technological advancements that have led to digitising all facets of society, and a new paradigm has formed. This paradigm changed the subject content and instructional methods while serving as the basis for developing professional competency standards. The personal qualities required for a digital economy specialist impact the study of humanitarian courses, but it is also crucial to pay close attention to professional courses. The fundamental concepts of the new paradigm and the demands placed on experts for the digitalisation of humanitarian work are enormous. The primary domains of expert labour in the digital economy were used to build a hierarchy of digital skills. Work of a professional calibre is required in fields as diverse as information security, big data, AI system development, and digital management. The term "educational microcosm" refers to a collection of activities, assignments, and projects that students can complete in pairs, trios, quartets, or larger groups to foster the growth of a specific skill. Educational 'micro-meters' allow you to create a scalable framework for continued education and professional development for humanitarian staff. The use of machine learning to gain digital skills is eminent (Apatova *et al*., 2021). Humanitarian capacity building through E-learning requires a workforce expert in the tools, techniques and technologies of Industry 4.0 to make E-learning fruitful and relevant to the disruptive market.

Humanitarian Resilience Through the Shift of Thinking

Many of the world's most critical issues, such as clean water, sanitation, energy access, carbon reduction, infrastructural development, and sustainability movement in various domains of value, can only be solved with the help of engineers and technologists. These problems are much discussed in the field of "humanitarian engineering". Despite the urgency, most engineers do not devote their careers to finding solutions for issues in areas with the highest need. How can young engineers be

inspired to tackle the critical problems many people face worldwide? How may one cultivate a sense of obligation or professional responsibility? How might young engineers' perceptions of their careers be connected to the objectives of humanitarian engineering? These issues were addressed through an online course linking "humanitarian engineering", UN SDGs, and engineers' social responsibility to cultural dimensions, multicultural teams, and intercultural communication. Pre- and post-test results show several statistically significant trends that imply the online course "Intercultural Engineering" may have some success in influencing students' perceptions. As a result, it seems to be a helpful instrument for advancing SDG 17 that aims to revive international partnerships for sustainable development via shared values, visions, and objectives (van de Vegte, 2017).

Hypothesis

1. Are digital mode and face-to-face mode equally effective in training humanitarian workers?
2. Had humanitarian workers trained through digital mode and face-to-face mode performed equally well academically?
3. Had humanitarian workers trained through digital mode and face-to-face mode performed equally well in a crisis?
4. Had humanitarian workers trained through digital mode and face-to-face mode performed equally well in post-crises aid work?

METHODOLOGY
Sample Characteristics

An online course was developed with the help of a registered nursing college. The course content was based on the already established international practices for emergency response in disasters and developed with the help of national nursing council guidelines. The humanitarian workers were selected from one organisation based on convenience sampling and divided into two groups. The first group comprised 48 workers working as primary healthcare providers in 2 remote areas of the country. The second group consisted of 34 humanitarian workers working in the same area as the primary health workers. The first group was given training through online media, and the second group was given training via conventional methods. Both groups were sent to the field during recent floods, and their progress was monitored and compared. Of the respondents 49% were female and 51% were male. Of the respondents, 57% were below the age of 30 years and 35% were aged 30-40, while the remaining 2% were above 40 years of age.

MEASURES
Mode of Education

The mode of education was decoded into dummy variables, 1 for conversation learning and 2 for E-learning. The academic performance of humanitarian workers was obtained from the course teacher, and humanitarian workers' job performance was obtained from the district manager.

Performance

The academic performance was measured in grades from C, C+, B, B+, and A. The C stands for lower academic performance while an A grade was considered higher academic performance. Job performance in crises, as well as post-crises, was measured by using Williams and Anderson's (1991) job performance scale. Two questions were adopted from Schwirian's (1978) nursing performance measurement scale based on the opinions of two experts in the field. Both of the items are illustrated below for ready reference "Help a patient meet his/her emotional needs". "Contribute to productive working relationships with other health team members".

Statistical Tools

The scale's internal consistency was obtained using the alpha reliabilities of the scales in Table 1. Descriptive statistics tests were also conducted to measure the mean, standard deviation, and correlation between variables (Table 1).

Regression Analysis

The regression analysis was performed to test the three hypotheses, the results of which are presented in Tables 2, 3, and 4.

Table 1: Standard Deviation, Mean, Alpha Reliabilities Univariate Statistics and Pearson Correlation

Variables	Mean	S.D	1	2	3	4	5	6
Gender	1.4884	0.5028	-0.26*					
Mode of Education	1.4419	0.4992	-0.097	.25*				
Age	1.5000	0.7316	0.19	-.097				
Pre Crises Performance	3.2907	1.57	-0.18	0.25*	-0.04	(0.75)		
Academic Performance	3.4367	0.7394	0.10	0.10	0.058	0.050		
Post Crises Performance	3.6857	0.7528	-0.17	0.008	-0.127	0.34**	0.13	(0.74)

Notes: *Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed)
Source: Constructed by authors

Table 2: Hierarchal Regression Analysis Results

	Independent Variable	B	ΔR 2	ΔF
Step 1	Gender	-0.568*	0.033*	2.87*
Step 2	Mode of Education	0.698**	0.046**	4.13**
Step 3	Age	-0.002	0.00	000

Notes: Dependent variable = Academic Performance: N=86; *P <0.01; **<0.05
Source: Constructed by authors

Table 3: Hierarchal Regression Analysis Results

	Independent Variable	B	ΔR 2	ΔF
Step 1	Gender	0.16	0.012	1.004
Step 2	Mode of Education	0.2	0.018	1.542
Step 3	Age	0.04	0.002	0.167

Notes: Dependent variable = Pre-Crises Performance; N=86; *P <0.01; **<0.05
Source: Constructed by authors

Table 4: Hierarchal Regression Analysis Results

	Independent Variable	B	ΔR 2	ΔF
Step 1	Gender	-0.26	.032	2.73
Step 2	Mode of Education	-0.06	.002	.13
Step 3	Age	-0.10	.009	.79

Notes: Dependent variable = Post-Crises Performance: N=86; *P <.01; **<.05
Source: Constructed by authors

The results revealed that the mode of education had a significant effect on the academic performance of the respondents *(B=0.69, P <0.01)*, while on the other hand, females also performed well in the academic performance in comparison with the male academic performance *(B=0.57, P <0.05)*. However, gender and age did not depict any significant effect on the pre-crisis and post-crisis performance of both groups. We also conducted item-wise regression of job performance and found that the online education group performed well in psychological care in pre-crises and the conventional education group performed well in team in post-crisis situations.

RESULTS

The humanitarian workers trained through E-learning performed well academically compared to the second group. Both groups were sent to the field during recent floods, and their progress was monitored and compared. The results revealed that both groups performed equally well. However, one group performed well in the psychological care of the vulnerable population. These results concluded that we could use an online education mode to train humanitarian workers in remote areas. The humanitarian workers trained through conventional education performed well compared to the first group.

DISCUSSION

Hypothesis 1: The digital and face-to-face modes were equally effective in training humanitarian workers. The medium did not change the overall pedagogical taxonomy used by the instructors. There were some changes in techniques that did not alter the outcome in terms of training milestones.

This projects that training can become cost-effective by deploying E-learning where instructors can teach from diverse geographic locations. The instructors and students can create a classroom training environment through a digital mode at diverse geographic locations. Therefore, students and instructors can continue other responsibilities simultaneously. Many reputable universities have observed this, and Massive Online Open Courses (MOOCs) have been launched.

Hypothesis 2: The humanitarian workers trained through digital and face-to-face modes did not perform equally well academically. The candidates using a digital mode had the advantage of studying at their own pace, choice of time and sections of the training. Moreover, the digital mode allowed repetition and supportive tools for learning. This resulted in better academic performance compared with a face-to-face mode.

Hypothesis 3: The humanitarian workers trained through digital and face-to-face mode did not perform equally well in crisis management in the field. The digital mode provided the support and resources for better psychological well-being, mental resilience, and overall deployment of agility. The candidates rapidly changed their learning pace and adjusted to work targets. The remaining dimensions of performance in the crisis management field were the same in both training modes.

Hypothesis 4: The humanitarian workers trained through digital and face-to-face modes did not perform equally well in post-crises aid work. The candidates trained face-to-face were observed to be better in teamwork, socialisation, and lean techniques. The reason behind the capability lean was that they had to plan ahead of things in order to keep a balance in work and academic targets. Notably, face-to-face mode synergised discussions, causal meet-ups and a chance to understand each other better, enhancing socialisation and teamwork spirit.

CONCLUSIONS

COVID-19 and rapid flooding due to climate change has unleashed an unprecedented crisis, causing further disruption preventing the achievement of the sustainable development agenda by 2030. The most recent pandemic and floods have affected the world's poorest and most vulnerable people, while even the full deployment of humanitarian workers also failed to cope with the current magnitude of the disaster. Demand for humanitarian workers is growing, especially in underdeveloped or developing countries. The reliance of international bodies such as the United Nations and the European Union on local humanitarian staff to provide life-saving relief assistance in the affected area is continuous. However, national humanitarian staff failed to save many precious lives due to a lack of training. According to the current scenario, as many governments and international bodies highlighted, the demand for trained humanitarian workers cannot be filled through conventional methods. Therefore, in the era of technology, we argue that the only solution for getting up-to-date knowledge, capabilities, and skills in lifelong learning is through virtual platforms. Some international organisations have adopted the E-learning method for training humanitarian workers. However, there is very little empirical evidence regarding the effectiveness of E-learning in training

humanitarian workers. This study was conducted in two regions most affected by climate change disasters and the COVID-19 pandemic, with little response capacity. The humanitarian workers were trained using different E-learning techniques, and their performance was evaluated.

An online course was developed with the help of a registered nursing college. The course content was based on the already established international practices for emergency response in disasters, and developed with the help of national nursing council guidelines. The humanitarian workers were selected from one organisation based on convenience sampling and divided into two groups. The first group comprised 48 workers working as essential healthcare providers in two remote areas of the country. The second group consisted of 34 humanitarian workers working in the same area as the essential health workers. The first group was given training through online media, and the second group was given training via conventional methods. Both groups were sent to the field during recent floods, and their progress was monitored and compared. The results revealed that both groups performed equally well. However, one group performed well in the psychological care of the vulnerable population. These results concluded that we could use an online education mode to train humanitarian workers in remote areas. As the impact of climate change and pandemics in the future is more likely to come, humanitarian workers can be trained by using an online mode of education to enhance their response in emergencies.

LIMITATIONS OF THE STUDY AND IMPLICATIONS FOR PRACTICE

The study lacks longitudinal observation based on year-by-year records of outcomes for several instances. Another limitation of the study is the detailed profile of the humanitarian workers, demographics, and personality types. Further in-depth studies are needed to dive deep into this untapped research direction, as this study is the stepping stone for this purpose.

FUTURE RESEARCH

The cultural implications, work settings in different kinds of humanitarian missions, the addition of MOOCs and blended modes, the personality profiles of humanitarian workers, groups of skill sets and their teaching requirements, inclusive humanitarian settings, fourth industrial revolution and remote work dynamics are some future research avenues.

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