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E-B Environment - Behaviour Proceedings Journal

STELLAR2023Langkawi

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e-IPH e-International Publishing House Ltd., United Kingdom

Symposium on Teaching Excellence, Learner-Driven Learning and Academic Research

Adya Hotel, Langkawi, 25-26 October 2023

Organised by: The Office of The Deputy Vice-Chancellor (Academic and International)Level 4, Canseleri Tuanku Syed Sirajuddin Universiti Teknologi MARA40450 Shah Alam, Selangor, MALAYSIA

Challenges of Fieldwork Courses for Undergraduate Students in the Plantation Management Program at UiTM

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Abstract

Fieldwork is crucial in Plantation Management programs, bridging theory and practice. This study identifies various challenges of fieldwork courses and their impacts on undergraduate students' learning experiences in the Plantation Management Program at UiTM. Quantitative research via Google Forms surveyed 131 students. SPSS 28 analyzed data using descriptive, correlation, and regression methods. Findings highlight physical activity (μ=3.83), academic support (μ=3.90), and safety concerns (μ=3.89) as primary challenges. Correlation shows physical activity relates positively to career readiness (r (129) =.378, p=.001). This research informs administrators about challenges, aiding in solutions exploration. Future studies should focus on mitigating fieldwork challenges.

Keywords: Challenges; Course; Fieldwork; Plantation

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DOI: https://doi.org/10.21834/e-bpj.v9iSI21.6078

1.0 Introduction

Education is a transformative journey that equips individuals with the necessary knowledge, skills, and perspectives to navigate the challenges of an ever-evolving world. In the Plantation Industry Management Program offered at Universiti Teknologi MARA (UiTM), the fieldwork courses are essential to blend the theory with actual field practice and were designed to bridge the gap between classroom instruction and real-world applications (Scott et al., 2012). To prepare the students for the actual environment, fieldwork needs to be more scientific and done more systematically (Arı, 2019). It should be carefully constructed and coordinated with field experiences (O'Connell et al., 2021). Hands-on fieldwork, aligned with Kolb's cycle, emphasizes concrete experience, reflection, conceptualization,

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and experimentation (Morris, 2020). The plantation management program involves extensive fieldwork with physical activities, preparing students for plantation and nursery operations related to major crops like oil palm, rubber, cocoa, and rice. However, existing research predominantly focuses on programs with minimal physical involvement, leaving a gap regarding fieldwork courses in plantation industry management programs. Therefore, this study's objective is to identify the significant challenges encountered in fieldwork courses and their influence on undergraduates' academic journey and performance in UiTM's Plantation Industry Management Program. By investigating the dynamic between theoretical instruction and hands-on participation, the research clarifies how these challenges in fieldwork experiences relate to students' professional growth. With the empirical evidence and reasoning, the following hypothesis has been formulated: *H1: Physical activity during fieldwork practice positively relates to the student's career readiness and professional development.*

This study specifically focuses on students enrolled in the Plantation Industry Management Program at UiTM who have completed their fieldwork courses. Therefore, the findings may not be generalizable to students in different academic programs. The study's limitation arises from non-responsive students to the questionnaires distributed, compounded by the geographical dispersion of students across various UiTM branches throughout Malaysia.

2.0 Literature Review

In recent years, the landscape of higher education has seen a growing emphasis on experiential learning, acknowledging that hands-on experiences can significantly impact students' comprehension, retention, and application of theoretical concepts (Yaakob et al., 2020). For example, the enforcement of High End-Technical and Vocational Education and Training (HETVET) in higher learning institutions in Malaysia (Md Yusoff et al., 2020). In UiTM, the competitiveness of the academic programs was assessed through their popularity, enrolment rates and graduate employability using an assessment tool called IDSPA (Index of Academic Program Competitiveness) (Tahir et al., 2023). To achieve good graduate employability, it is essential to produce a student with a skill aligned with industry needs (Tang & Al Qahtani, 2020). Therefore, fieldwork courses offered in an academic program are one of the options. Fieldwork courses, characterized by hands-on activities outside the traditional classroom setting, have been identified as a primary path for delivering experiential learning (Morris, 2020).

Fieldwork activities strongly influence students' learning and career prospects and encourage communication and problem-solving skills (Peasland et al., 2019) and quality of educational leadership experiences (Coleman et al., 2021). In the plantation sector, graduates with fieldwork experience are highly valued as they showcase real-world readiness. Fieldwork courses offer students the opportunity to step outside the confines of traditional classrooms and immerse themselves in their chosen field's practical challenges and complexities. However, limited research focuses on the challenges of fieldwork courses offered in the Plantation Management Program, specifically in UiTM. It is very important to study the challenges of these fieldwork courses because the program itself offers a holistic understanding of plantation management that is aligned with industry needs (Tang & Al Qahtani, 2020). In previous works, there are several challenges often related to fieldwork activities and were highlighted in this study, specifically the limited practical experience in fieldwork courses (O'Connell et al., 2021), difficulties in adapting to new environments (Krause et al., 2021), the involvement of physically demanding tasks (Hill & Dao, 2021), teamwork and collaboration conflicts (Ramírez-Castañeda et al., 2022), sufficient support from academic affairs department (Arı, 2020), resources and facilities provided (O'Connell et al., 2021; Krause et al., 2021), safety concerns during fieldwork activities (Sluka, 2020) and exposure to the emotional and physiological stress (Posselt et al., 2022). From these enlisted challenges, the key challenges of fieldwork courses in the Plantation Management Program were identified, and the impact on student's learning experiences was then analyzed.

3.0 Methodology

3.1 Research design

This study used a quantitative approach and a survey research design to gather data. The participants were undergraduate students enrolled in a Plantation Management course at Universiti Teknologi MARA Jengka, Pahang. According to Ahmad et al. (2019), this method is commonly used in social science research to examine phenomena affecting individuals, gathering numerical data that can be quantified and accurately measured. In this study, convenience sampling was employed by selecting undergraduate students from the second and fourth semesters who accomplished fieldwork courses, resulting in a total population of 196 students. Twenty-four close-ended questionnaires were distributed through a Google Forms link. According to the Raosoft sample size calculator (Raosoft, 2023), 131 survey responses are sufficient for analysis at a 95% confidence level.

3.2 Instrumentation

The data collection instrument comprised four sections: A, B, C, and D. Section A gathered demographic data, including age, gender, locality, education level, agricultural background, semester, and fieldwork grades. Section B addressed challenges during fieldwork, while Section C focused on the impact on learning and academic performance. Section D assessed students' views on future fieldwork courses. Nominal and ordinal scales were used, with a Likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). A preliminary test ensured validity, and the questionnaire was refined before the final data collection. The reliability analysis using Cronbach's alpha was conducted to examine the internal consistency of items for each of the constructs in the instrument.

3.3 Statistical analysis

The data were analyzed using SPSS version 28, employing descriptive analysis, reliability analysis, correlation coefficients, and regression analysis. Research questions were addressed using percentages and means, systematically presenting and interpreting all questionnaire data. Pearson correlation coefficient analysis explored the relationship between fieldwork challenges and student development performance at UiTM, measuring the strength and direction of the relationship (-1 to 1). Hypothesis testing was conducted at a 95% confidence level with a significance level of 0.05. Additionally, a simple regression analysis was performed to determine the functional relationship between independent and dependent variables and assess the impact of fieldwork on students' learning experiences.

4.0 Findings

4.1 Reliability analysis

The reliability of the Likert scale questionnaire was evaluated using Cronbach's Alpha in SPSS. This measure of internal consistency ranges from 0 to 1, with higher values indicating greater reliability. According to Sekaran and Bougie (2013), a value of 0.700 or above signifies strong internal consistency. In this study, Cronbach's Alpha was 0.716 for fieldwork challenges and 0.802 for the impact of challenges on student development, indicating acceptable reliability levels for all variables. Table 1 presents these values.

Table 1. Summary of reliability statistics

Variable	Cronbach's Alpha	No. of items
Challenges of fieldwork courses	.716	8
Impact of fieldwork course	.802	6

4.2 Demographic profile of the respondents

Table 2 reports the demographic profiles of the 131 undergraduate student respondents at Universiti Teknologi MARA Jengka, Pahang. Most respondents belong to semester four (50.4%) and are predominantly aged between 18-20 years old (96.9%) with an academic qualification of SPM (96.9%). This study shows that female students' involvement in the Plantation Management Program is slightly higher (51.1%) than male students (48.9%). The investigation reveals a slightly higher participation rate of female students (51.1%) than male counterparts (48.9%) in the Plantation Management Program. Additionally, many respondents lack prior experience in agricultural sciences (61.8%), yet most originate from rural areas (63.4%) and possess farming experience (67.9%). This foundational agricultural knowledge acquired through hands-on farming activities potentially contributes to the high success rates (93.1%, A+ to A-) achieved by many respondents in fieldwork courses.

Table 2. Demographic profiles of undergraduate students (n=131)

Demographic profile	Category	Frequency	Percentage (%)
Gender	Male	64	48.9
	Female	67	51.1
Age	18 - 20	127	96.9
	21 - 23	4	3.1
Location of locality	Rural area	83	63.4
	Urban area	48	36.6
Semester of study	Semester 2	65	49.6
	Semester 4	66	50.4
Level of education	SPM	127	96.9
	Pra-Diploma	4	3.1
Agricultural science background	Yes	50	38.2
	No	81	61.8
Previous experience in fieldwork	Yes	89	67.9
	No	42	32.1
Exam grades of fieldwork courses	A+ to A-	122	93.1
	B+ to B-	7	5.3
	C+ to C	1	0.8
	Failed	1	0.8

4.3 Descriptive statistics of the challenges faced during fieldwork courses

Table 3 displays the descriptive statistics for each item assessed in the questionnaire, including percentages, means, and standard deviations. Students may face physical fitness and endurance challenges, with 43.5% agreeing (μ=3.83). Additionally, safety concerns during fieldwork activities were identified as another challenge, with 44.3% of students in agreement (μ=3.89). Furthermore, 34.4% strongly agreed that the academic affairs department did not provide adequate support during fieldwork activities (μ=3.90). Conversely, most participants perceived limited practical experience in plantation management, difficulty adapting to new environments, conflicts in teamwork and collaboration, constraints in resources and facilities, and emotional and physiological stress as insignificant challenges during fieldwork courses.

Table 3. Responses on students' challenges during fieldwork courses (n=131)

Item No.	Statements	Percentage (%) SD	D	N	A	SA	μ	Std. Dev.	Decision
1	Limited practical experience in plantation management	6.9	14.5	46.6	23.7	8.4	3.12	0.992	Low challenge
2	Difficulties adapting to new environments	14.5	35.1	31.3	15.3	3.8	2.59	1.037	Low challenge
3	Fieldwork activities involve physically demanding tasks	1.5	6.1	24.4	43.5	24.4	3.83	0.921	High challenge
4	Teamwork and collaboration conflicts	26.7	29.8	24.4	9.9	9.2	2.45	1.242	Low challenge
5	The academic affairs department of the faculty does not provide sufficient support	3.1	3.8	27.5	31.3	34.4	3.90	1.022	High challenge
6	Limited resources and facilities provided	9.9	22.9	35.1	22.9	9.2	2.98	1.109	Low challenge
7	Safety concerns during fieldwork activities	0.8	6.9	21.4	44.3	26.7	3.89	0.905	High challenge
8	Expose students to emotional and physiological stress	13	31.3	35.9	13.0	6.9	2.69	1.073	Low challenge

SA = Strongly Agree, A = Agree, N = Neutral, SD = Strongly Disagree, D = Disagree, μ = sample mean, Std. Dev. = standard deviation.
Decision – weightage average = 25.45/8 = ***3.18***

4.4 Descriptive statistics on the impact of fieldwork courses on students' learning experiences

Table 4 presents students' feedback regarding the impact of fieldwork courses. Among all responses, four items stood out as significantly influencing students' learning experiences and academic performance. These include increased motivation and engagement (μ=4.03), improved communication and interpersonal skills (μ=4.18), enhanced career readiness and professional development (μ=4.09), and fostering personal growth and confidence (μ=4.16). Conversely, the effects on academic performance and the enhanced understanding and application of plantation management were perceived as having minimal impact on the students.

Table 4. Responses on the impact of fieldwork courses on students' learning experiences (n=131)

Item No.	Statements	Percentage (%) SD	D	N	A	SA	μ	Std. Dev.	Decision
1	Impact on student's academic performance	14.5	29.0	30.5	21.4	4.6	2.73	1.096	Low impact
2	Enhanced the understanding and application of plantation management	2.3	7.6	29.0	35.9	25.5	3.74	0.997	Low impact
3	Increased motivation and engagement	0.8	0.8	25.5	41.2	32.1	4.03	0.822	High impact
4	Improved communication and interpersonal skills	0.0	1.5	21.4	35.1	42.0	4.18	0.818	High impact
5	Develop career readiness and professional development	0.0	2.3	22.1	39.7	35.9	4.09	0.818	High impact
6	Develop personal growth and confidence	0.8	0.8	18.3	42.0	38.2	4.16	0.802	High impact

SA = Strongly Agree, A = Agree, N = Neutral, SD = Strongly Disagree, D = Disagree, μ = sample mean, Std. Dev. = standard deviation.
Decision – weightage average = 22.93/6 = ***3.82***

4.5 Future plan for fieldwork courses

Table 5 summarizes students' responses about future fieldwork courses, showing that many found them beneficial and wanted them to continue. These results align with Deegan et al. (2016), who found that students value practical, hands-on agricultural science lessons.

Table 5. Responses on the plan for fieldwork courses (n=131)

Plan	**Category**	**Frequency**	**Percentage (%)**
Do you wish to do fieldwork practices in the future	Yes	121	92.4
	No	10	7.6
Do you think fieldwork courses are beneficial and will assist you in your career?	Yes	130	99.2
	No	1	0.8

4.6 Correlation analysis

Correlation is a bivariate analysis that measures the strength and direction and indicates whether there is a statistically significant linear relationship between the two variables. Therefore, the results of the Pearson correlation that was used to investigate the relationship between physical activity during fieldwork practice and the student's career readiness for this study are presented in Table 6. The table directs the significance is at 0.01 levels (2-tailed) is 0.000, and Pearson Correlation (r) is 0.378. Thus, this study revealed a significant relationship between fieldwork activities and students' career readiness.

Table 6. Correlation analysis

Variable		Fieldwork activities involving physically demanding tasks	Career readiness and professional development of the students
Fieldwork activities involving physically demanding tasks	Pearson Correlation	1	.378**
	Sig. (2-tailed)		<.001
	N	131	131
	Pearson Correlation	.378**	1.000

Career readiness and professional development of the students	Sig. (2-tailed)	<.001	
	N	131	131

*** Correlation is significant at the 0.01 level (2-tailed)*

4.7 Regression analysis

This study uses simple regression analysis to examine the impact of fieldwork on students' career readiness in the Plantation Management Program at UiTM. The B coefficient measures how much career readiness changes with variations in fieldwork, holding other factors constant. Adjusted R^2 accounts for additional variables, and the p-value assesses the reliability of the results. Table 7 shows that physically demanding fieldwork tasks influence career readiness by 14.3% (R^2), with Adjusted R^2 indicating that fieldwork accounts for 13.6% of the variation in career readiness. Thus, fieldwork has a significant but limited impact on career readiness. Table 8 reveals a significant t-value ($p = 0.001$, $p < 0.05$) and an unstandardized constant statistic of 2.806, predicting career readiness if all other variables are zero. The beta coefficient ($\beta = 0.378$) indicates that a one-point increase in physical activity during fieldwork raises career readiness by 0.378 points. Therefore, the study confirms that physical activity during fieldwork significantly enhances students' career readiness and professional development.

Table 7. Model summary

Model	R	R Square	Adjusted R Square	Std. error in the Estimate
1	.378[a]	.143	.136	.760

a. Predictors: (Constant), Fieldwork activities involving physically demanding tasks

Table 8. Regression analysis coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.806	.285		9.842	<.001
	Fieldwork activities involving physically demanding tasks	.336	.072	.378	4.638	<.001

a. Dependent Variable: Career readiness and professional development of the students

5.0 Discussion

5.1 The respondents' demographic characteristics

The demographic profiles of the 131 undergraduate student respondents at Universiti Teknologi MARA Jengka, Pahang, indicate several noteworthy trends. Interestingly, female students slightly outnumber male students in the Plantation Management Program, potentially reflecting evolving gender dynamics in Malaysia's agricultural sector (Shisler & Sbicca, 2019). While historically male-dominated, recent years have witnessed an increase in female participation, particularly in research, education, and entrepreneurship related to agriculture (Peralta, 2021). Despite most respondents lacking a background in agricultural sciences, a significant proportion hail from rural areas and possess farming experience. This experiential knowledge likely contributes to their high achievement rates in fieldwork courses, aligning with studies emphasizing the importance of locality in youth involvement in agriculture. The rural background appears critical in fostering agricultural knowledge, with parental influence playing a crucial role in shaping youths' agricultural aspirations (Nandi et al., 2022).

5.2 Challenges during fieldwork courses

Table 3 presents descriptive statistics on participants' perceptions of fieldwork challenges, with physical activities being a major concern (μ=3.83). This underscores the need to consider students' physical fitness in fieldwork design. Paez-Maldonado et al. (2020) found that fitter individuals perform better academically and gain more cognitive benefits from physical activity interventions. Safety issues during fieldwork (μ=3.89) were also significant in this study, highlighting risks in agricultural settings, especially in rural and isolated areas involving machinery or wildlife (Arı, 2020). Blonder (2022) emphasized that supervisors are crucial in ensuring the safety of students in the field. Besides, students reported insufficient support from the faculty department during fieldwork (μ=3.90). Limited access to academic resources and faculty assistance caused logistical and administrative issues. Woli (2023) found that cooperation and ongoing communication between the training facility, agency supervisor, and agency are essential for students to gain professional knowledge and skills during fieldwork. Conversely, challenges related to practical experience, adaptation to new environments, teamwork conflicts, and emotional stress are perceived as less significant. These insights underscore the multifaceted nature of challenges in fieldwork courses and emphasize the importance of addressing physical demands and safety considerations while providing adequate academic support.

5.3 Impact of fieldwork courses on students' learning experiences

Four items were identified as having a significant positive impact: increased motivation and engagement (μ=4.03), improved communication and interpersonal skills (μ=4.18), enhanced career readiness and professional development (μ=4.09), and promotion of personal growth and confidence (μ=4.16). These findings align with Nurwasilatusaniah et al. (2021), who highlighted the effective outcomes of field courses, such as fostering environmental connections and intrinsic motivation to learn. Additionally, fieldwork enhances

teamwork and communication skills, which are crucial for professional settings (Shinbrot et al., 2022). It also supports students' personal development beyond concepts directly related to their field of study, knowledge, and career prospects (Peasland et al., 2023). Meanwhile, Table 6 shows the Pearson correlation analysis results, revealing a positive association (r = 0.378) between physical activity during fieldwork and students' career readiness. This aligns with Zembazemba's (2020) findings on fieldwork's importance in career preparation in Tanzania and Otekunrin et al. (2019), who reported that over half of their participants received parental encouragement to pursue agriculture careers. This evidence suggests that physical engagement in fieldwork positively correlates with students' career readiness and professional growth. Consequently, the hypothesis posited in this study is affirmed. ***H1****: Fieldwork activities involving physically demanding tasks positively impact the students' career readiness and professional development.*

6.0 Conclusion& Recommendations

It can be concluded that the significant challenges in fieldwork courses for undergraduate students in the Plantation Management Program at UiTM are due to physical activities during fieldwork (μ=3.83), sufficient support from the academic affairs department (μ=3.90), and safety concerns (μ=3.89). Also, a significant correlation is observed between physical activity during fieldwork and a student's career readiness and professional development (r (129) =.378, p=.001). It is suggested that future studies should investigate the solutions and approaches to mitigate these challenges during fieldwork courses, therefore improving the quality of these learning experiences and ensuring that students gain the necessary skills and knowledge.

Acknowledgements

The authors would like to thank the Faculty of Plantation and Agrotechnology and the respondents involved in the survey.

Paper Contribution to Related Field of Study

This study lays a solid framework for understanding the challenges of fieldwork courses for students in the Plantation Management Program at UiTM. It also contributes substantially to the knowledge of academic administrators, allowing them to resolve fieldwork challenges and continuously enhancing overall educational programs.

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