

Impact of Rural Agricultural Work Experience Program (RAWEP) on Knowledge of Agriculture Students

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Abstract The present study was conducted in the University of Agricultural Sciences, GKVK, Bangalore. A total of 45 students were selected as respondents and the data were collected personally in face to face condition once before the RAWEP and once after the RAWEP. The results indicate that RAWEP had positive impact on knowledge gain of students because compared to before RAWEP, after undergoing the RAWEP with respect to the crop production, social science and plant protection, 46.66% of the students had gained medium level of knowledge, 57.77% of the students had gained high level of knowledge and 62.22% of the students had gained high level of knowledge respectively.

Keywords Random sampling technique, RAWEP, Crop production, Social science, Plant protection.

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Introduction

The purpose of education is good human resource development, nation building and to impart skills, knowledge and values to an individual for empowerment. Agricultural education is basically aimed to develop skilled manpower to take up farming and undertaking research, teaching and extension for agricultural development in the Indian context. The success of agricultural education depends on the effectiveness of the system i.e. to what extent it can mould the graduates with the right combinations of professional competencies and confidence (Anonymous 1978).

In this regard experiential learning is the basic approach towards problem solving and improving interaction with the outside world. The learning process imparts a direction to the students to think and act and eventually creates self-confidence (Singh 2016). It offers a direction to the students to develop their competence, capability, capacity building, acquiring skills, expertise and a holistic development. However, it requires interest of an individual with total commitment and involvement, participation, reception, active interest, dedication, skill, curiosity, vision and mission. Under the changing dynamics of economical and industrial growth, agriculture has to undergo changes with new approaches, therefore, experiential system in agriculture has a strong potential for imparting better training of the agricultural technocrats with high level of skill in combination with the modern out-look and management capacity (Patil 2012).

Agricultural education is changing in a very rapid manner to meet the need of the society. The students of agriculture are learning substantial basic and applied issues of science and technology. However, they do not possess adequate self-confidence in starting their own commercial farming. Under this situation, Rural Agricultural Work Experience Program (RAWEP) becomes important in building competence and this program was introduced in all the SAUs in India to build technical, social and communication skills (Anonymous 2003).

Considering the importance of agricultural knowledge on socio-economic development of the farmers, agricultural graduates during RAWEP internship have to work and study in rural areas as per University norms. In this context, the course, Rural Agricultural Work Experience (RAWEP) Program which emphasizes on learning through experience becomes central to develop good human resource. Further RAWEP is a well organized system with an objective to impart practical training to final year BSc agriculture students by providing them an opportunity to live and work with the farmers in the villages. It is introduced with a motive to provide the students an opportunity to have a feel of real life situation of the profession. This is a sort of training and practical exposure to agriculture students in field situation (Anonymous 1999). Therefore, a time to time evaluation of the program in action would provide a basis to determine the progress or effectiveness of the program. In this connection, Godawat and Maheshwari (2008) reported that for boosting the practical knowledge and experience of the students, KVK scientists were more effective guiding and teaching resource during this program. Mahadik et al. (2011) concluded that majority of the students were satisfied with the execution of RAWEP program and they were benefitted in terms of acquaintance of living conditions of farmers, village institutions and development of insight into the field problems. Singh and Tyagi (2012) conducted a study on observation of contact farmers on Rural Awareness Work Experience Program observed that, RAWEP in the villages gives significant impact on both the farmers and students basically on enhancement of knowledge of crops and enterprises and also on skill development in value added products. Bordoloi et al. (2013)

revealed that, over half of the respondents (58.32%) perceived that the RAWEP program was useful in gaining knowledge about the socio-economic conditions prevailing in rural areas and 35.97% of the respondents considered it to be very much useful. Only 05.70% felt it was not at all useful.

Considering the importance of RAWEP program in molding the graduating students in agriculture, there is a need to refine and make the program more pragmatic with high standards. Keeping this in view, the present study was undertaken with the following objectives : To assess the impact of RAWEP on knowledge gain of agriculture students with respect to be crop production, to assess the impact of RAWEP on knowledge gain of agriculture students with respect to the plant protection, to assess the impact of RAWEP on knowledge gain of agriculture students with respect to the social science, and to find out the relationship between overall knowledge and the profile of agriculture students.

Materials and Methods

Locale of the study : The study was conducted at the University of Agricultural Sciences, GKVK, Bangalore during 2017-18.

Research design and sample : Before-after research design was used to know the impact of Rural Agricultural Work Experience Program on knowledge of agriculture students. For this study 45 agriculture students were selected randomly as a sample and were considered as respondents before and after undergoing the RAWEP.

Instruments used : Structured questionnaire were used to collect the data covering the objective of the study. The data was collected personally in face to face condition once before the RAWEP during 2017 and once after the RAWEP during 2018. The data collected from the respondents were edited, scored, tabulated and analyzed using the statistical tools and techniques viz., frequencies, percentages, mean, standard deviation, simple correlation and Paired t test.

Table 1. Statement-wise knowledge level of agriculture students with respect to Crop production. CK : Correct Knowledge, ICK: Incorrect Knowledge.

SI No.	Statements	Knowledge of agriculture students (n=45)			After		
		Before	Before	Mean	CK	ICK	Mean
1.	Crop production						
1	Methods of preparation of compost	16 (35.55)	29 (64.44)	0.3	43 (95.55)	2 (4.44)	0.9
2	Factors considering while seed treatment products	18 (40.00)	27 (60.00)	0.4	41 (91.11)	4 (8.88)	0.9
3	Knowledge on irrigation schedule required for different crops	23 (51.1)	22 (48.88)	0.5	39 (86.66)	6 (13.33)	0.9
4	Classification of weed	23 (51.1)	22 (48.88)	0.5	38 (84.44)	7 (15.55)	0.8
5	Use of Cellulocytic culture	18 (40.00)	27 (60.00)	0.4	38 (84.44)	7 (15.55)	0.8
6	The bulky organic manures	21 (46.66)	24 (53.33)	0.4	38 (84.44)	7 (15.55)	0.8
7	The process of harvest and post-harvest handling of seed	21 (46.66)	24 (53.33)	0.4	38 (84.44)	7 (15.55)	0.8
8	The scientific method (s) of FYM enrichment	20 (44.44)	25 (55.55)	0.4	36 (80.00)	9 (20.00)	0.8
9	Knowledge on Agro-Climatic Zones (ACZ)	23 (51.11)	22 (48.88)	0.5	36 (80.00)	9 (20.00)	0.8
10	Common methods of seed treatment	16 (35.55)	29 (64.44)	0.3	30 (66.66)	15 (33.33)	0.7

Results and Discussion

Impact of RAWEP on knowledge level of agriculture students

Statement-wise analysis of knowledge level of agriculture students with respect to Crop production

A cursory look at Table 1 reveals that, before the RAWEP half of the students had knowledge on Agro-Climatic Zones of India, irrigation schedule required for different crops and classification of weed (51.11%), followed by Bulky organic manures and process of harvest and post-harvest handling of seed (46.66%) and scientific methods of FYM enrichment (44.44%) with mean scores of 0.5, 0.4 and 0.4 respectively. While after the RAWEP, a vast majority (95.55%) of students had gained knowledge regarding methods of preparation of compost, followed by factors considering while seed treatment products (91.11%), knowledge on irrigation schedule required for different crops (86.66%), use of Cellulocytic cultures in

composting bulky organic manures and classification of weed (84.44%) with mean scores of 0.9, 0.9, 0.9 and 0.8 respectively. It could be pointed out that, methods of preparation of compost was rated by majority of students. The reason might be that, during the RAWEP students had responsibility in collection of biomass/residue available in farmers field and they must give demonstration on composting steps therefore such activities and getting information might have benefited in this regard to gain more knowledge during the RAWEP.

Statement – wise analysis of knowledge level of agriculture students with respect to plant protection

The data in Table 2 depict that, before the RAWEP 60.00% of the students had knowledge regarding factors affecting pesticide use, followed by biological control of tomato fruit (48.88%) and non-chemical methods for pest and disease management (28.88%), with mean scores of 0.6, 0.5 and 0.7 respectively. Further the data in Table 2 shows about after RAWEP, a

Table 2. Statement-wise knowledge level of agriculture students with respect to plant protection. CK : Correct Knowledge, ICK : Incorrect Knowledge.

Sl. No.	Statements	Knowledge of agriculture students (n=45)					
		Before			After		
		CK	ICK	Mean	CK	ICK	Mean
2	Plant protection						
1	Non- chemical methods for pest and disease management	13 (28.8)	32 (71.1)	0.7	40 (88.8)	5 (11.1)	0.9
2	Biological control in tomato cultivation	22 (48.8)	23 (51.1)	0.5	38 (84.4)	7 (15.5)	0.8
3	Cultural methods for pests control	12 (26.6)	33 (48.8)	0.3	35 (77.7)	10 (22.2)	0.8
4	Factors affecting pesticide use	27 (60.0)	18 (40.0)	0.6	34 (75.5)	11 (24.4)	0.8

vast majority (88.88%) of the students had gained knowledge about non-chemical methods for pest and disease management, followed by biological control of tomato fruit (84.44%), cultural methods for pests control (77.77%) and factors affecting pesticide use (75.55%), with mean scores of 0.9, 0.8, 0.8 and 0.8 respectively. It can be concluded that, factors affecting pesticide use and non- chemical methods for pest and disease management were rated by majority of agriculture students. The probable reason might be that, students while carrying out survey work in the field and other related activities on pest management like learning from local conditions and practices and conducting demonstration of pest management activities might had positive impact on their knowledge enhancement related to the pests and disease management because the program is planned in such a way that provides more opportunities to students to

enhance their knowledge.

Statement – wise analysis of knowledge level of agriculture students with respect to Social science
It can be clearly noted from Table 3 that, before the RAWEP 53.33% of the students had knowledge regarding methods for the identification of opinion leaders, followed by steps of method demonstration (51.11%), purpose of resource map (37.77%) and purpose of result demonstration (31.11%), with mean scores of 0.5, 0.5, 0.4 and 0.3 respectively. Further the data in Table 3 shows about after RAWEP, a great majority (91.00%) of the students had gained knowledge about steps of method demonstration, followed by purpose of result demonstration and methods for the identification of opinion leaders (88.88%) and purpose of resource map (84.44%), with mean scores of 0.9, 0.9, 0.9 and 0.8 respectively. It could be con-

Table 3. Statement-wise analysis of knowledge level of agriculture students with respect to Social science. CK: Correct Knowledge, ICK : Incorrect Knowledge.

Sl. No.	Statements	Knowledge of agriculture students (n=45)					
		Before			After		
		CK	ICK	Mean	CK	ICK	Mean
3	Social science						
1	The steps of method demonstration	23 (51.1)	23 (48.8)	0.5	41 (91.1)	4 (8.8)	0.9
2	Methods for the identification of opinion leaders	24 (53.3)	21 (46.6)	0.5	40 (88.8)	5 (11.1)	0.9
3	The purpose of result demonstration	14 (31.1)	31 (68.8)	0.3	40 (88.8)	5 (11.1)	0.9
4	Purpose resource map	17 (37.7)	28 (62.2)	0.4	38 (84.4)	7 (15.5)	0.8

Table 4. Distribution of agriculture students according to their level of knowledge gain.

Category	Agriculture students (n=45)			
	Before		After	
	No.	Per cent	No	Per cent
Crop production				
Low	21	46.66	8	17.77
Medium	11	24.44	21	46.66
High	13	28.88	16	35.55
Total				
Plant protection				
Low	17	37.77	8	17.77
Medium	22	48.88	9	20.00
High	6	13.33	28	62.22
Total	45		45	
Social science				
Low	5	11.11	3	6.66
Medium	28	62.22	16	35.55
High	12	26.66	26	57.77
Total	45		45	

cluded that, steps of method demonstration and purpose of resource map were rated by majority of students. This is due to the facts that, RAWEP provides more opportunities to students to conduct demonstrations. As demonstration is the main part of their activities during the RAWEP, as well as resource map is the most important technique in PRA that students apply to complete their assignments during the RAWEP, therefore it is clear that such activities had positive impact on their knowledge and self-confidence of students.

Distribution of agriculture students according to their level of knowledge gain

Gain in knowledge by the agriculture students before and after the RAWEP with respect to Crop production

The data in Table 4 shows about knowledge gained with respect to crop production, before the RAWEP 46.66% of the students had low knowledge level, followed by high level of knowledge (28.88%) and medium level of knowledge (24.44%). After undergoing the RAWEP, knowledge level of the students had

changed from low level of knowledge (46.66%) to medium level of knowledge (46.66), followed by high level of knowledge (35.55%) and low level of knowledge (17.77%). The finding is more or less similar to the findings of Singh and Tyagi (2012).

Gain in knowledge among the agriculture students before and after the RAWEP with respect to Plant protection

The data in Table 4 indicates the results about knowledge gained by students with respect to the plant protection, before the RAWEP 48.88% of the students had medium knowledge level, followed by low level (37.77%) and high level of knowledge (13.33%). After undergoing the RAWEP, knowledge level of the students had changed from medium knowledge level (48.88%) to high level of knowledge (62.22%), followed by medium level (20.00%) and low level of knowledge (17.77%). The finding was more or less similar with finding of Mahadik et al. (2011).

Gain in knowledge by the agriculture students before and after the RAWEP with respect to Social science

The data in Table 4 depicts the results about knowledge gained by agriculture students with respect to the social science, before the RAWEP 62.22% of the students had medium knowledge level, followed by high level (26.66%) and low level of knowledge (11.11%). After undergoing the RAWEP, knowledge level of the students had changed from medium knowledge level (62.22%) to high level of knowledge (57.77%), followed by medium level (35.55%) and low level of knowledge (6.66%). The finding supported with the findings of Bordoloi et al. (2013).

Knowledge gained by agriculture students before and after RAWEP

Table 5 shows that, before the RAWEP students had low knowledge with respect to the crop production with a mean score of 3.9 and Standard Deviation (SD) of 1.4, while after undergoing the RAWEP their knowledge level changed to medium level of knowledge with a mean score of 7.0 and Standard Deviation (SD) of 2.1. Further, paired t test result indicates the highly

Table 5. Knowledge gained by students with sensitization before and after the RAWEP. **Significant at 1%, *Significant at 5%, NS=Non-significant.

Sl. No.	Category	No.	Mean	SD	Paired t value
1	Crop production				
	Before	45	3.9	1.4	7.94**
After	45	7.0	2.1		
2	Plant protection				
	Before	45	1.6	0.8	7.27**
After	45	3.2	1.2		
3	Social science				
	Before	45	1.7	1.0	12.54**
After	45	3.5	0.6		

significance of difference between before and after level of knowledge gained by students regarding to the crop production (7.94) at 1% level of significance which means due to the RAWEP knowledge level of students had enhanced.

Further, it can be seen from Table 5 that, before the RAWEP the students had medium knowledge regarding to the plant protection with a mean score of 1.6 and Standard Deviation (SD) of 0.8, while after undergoing the RAWEP their knowledge level changed to high level of knowledge with a mean score of 3.2 and Standard Deviation (SD) of 1.2 and the paired t test result shows the highly significance of difference between before and after level of knowledge gained by students regarding to the plant protection (7.27) at 1% level of significance so that the results highlights the RAWEP program as an important experimental learning program in different aspects and as the students gained more knowledge with respect to the plant protection through various field level activities in order to reach to the high level of knowledge.

Lastly, it can be observed from Table 5 that, before the RAWEP the students had medium knowledge with respect to the social science with a mean score of 1.7 and Standard Deviation (SD) of 1, while after undergoing the RAWEP their knowledge level changed to high level of knowledge with a mean score

Table 6. Relationship between overall knowledge and the profile of agriculture students. **Significant at 1%, *Significant at 5%, NS=Non significant.

Sl. No.	Agriculture students (n=45) Independent variables	Correlation Co-efficient (r)
1	Gender	-0.131*
2	Rural-urban background	0.313*
3	Achievement motivation	0.510**
4	Reading habits	0.637**
5	Information seeking behavior	0.634**
6	Self-confidence	0.048 ^{ns}
7	Aspiration level	0.455*
8	Leadership qualities	0.045 ^{ns}
9	Mass media exposure	0.328*

of 3.5 and Standard Deviation (SD) of 0.6 and the paired t test result highlights the highly significance of difference between before and after level of knowledge gained by students regarding to the social science (12.54) at 1% level of significance which means activities under social science had done at high level and students had used more learning opportunities in order to reach to the high level of knowledge with respect to the social science.

Relationship between overall knowledge and the profile of agriculture students

The correlation coefficients of 9 independent variables with the overall knowledge gained of the students are presented in the Table 6.

It could be observed from the Table 6 that, the variables such as achievement motivation, reading habits and information seeking behavior had positive and significant relationship with overall knowledge of students at 1% level of significance. Significant relationship with achievement motivation indicates students viewed that their future achievements are based on BSc (Ag) performance. So that students with high achievement motivation concentrating well on RAWEP and they might have tried to gain more knowledge and had a good performance during RAWEP. Significant relationship with reading habits and information seeking behavior shows that these two variables are very important tools to gain knowledge from different sources in different manner and the program itself provides opportunities to the stu-

dents to learn from environment and other available sources therefore such characteristics might lead the students towards good performance during RAWEP. Whereas rural-urban background, aspiration level and mass media exposure had positive and significant relationship with knowledge of students at 5% level of significance but gender had negative and significant relationship with overall knowledge of students at 5% level of significance. It can be noticed from significant relationship of knowledge with rural-urban background that, students from rural background had knowledge regarding rural setting, priorities and problems of rural area so the students might have tried to gain more knowledge in order to solve the rural problems and led the rural towards growth and development. Significant relationship with aspiration level depicts those students with high aspiration for goal concerning to future achievement were performing well in RAWEP and with mass media significant relationship depicts that, an increase in mass media use make students more exposed to the present situation in agriculture. Further today there are many opportunities to the students to have access to different mass media tools through which they could search, gain and learn about needed information and such exposure made them active in RAWEP.

Conclusion

After undergoing the RAWEP 46.66% of the students had gained medium level of knowledge with respect of crop production, 57.77% of the students had gained high level of knowledge with respect to the social science and 62.22% of the students had gained high level of knowledge with respect to the Plant protec-

tion. The Rural Agricultural Work Experience Program was found to be useful and had positive impact in terms of acquisition of knowledge and overall personality development. The basic courses specifically agronomy, students had gained medium knowledge compared to other courses. This calls for improving and revamping the learning situation by focusing attention on the elements like course syllabus, subject matter specialists, physical facilities, contact farmer and above all the learners themselves.

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