

**RESEARCH ARTICLE :**

Preferences of post graduate agricultural students regarding instructional methods

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29.09.2015;

Revised :

13.10.2015;

Accepted :

27.10.2015

SUMMARY : The student perceptions and preferences regarding the suitability of various instructional methods reveal the effectiveness of the each teaching method in their respective fields of study. A study conducted among the post graduate agricultural students, belonging to life science and social science streams, of Kerala Agricultural University disclosed their preferences regarding the presently followed instructional methods. It was found that both life science and social science students showed favourable attitudes towards active learning methods like discussions, practical sessions, demonstrations and field visits. The findings of the study and the suggestions put forward by respondents will help the agricultural universities to look into their instructional methods and modify the curricula in ways that would improve student learning.

How to cite this article : Mridula, N. (2015). Preferences of post graduate agricultural students regarding instructional methods. *Agric. Update*, 10(4): 351-354.

KEY WORDS :

Instructional methods, Student preferences, Active learning, Agricultural science

BACKGROUND AND OBJECTIVES

Today's agriculture field is technologically advanced and efficient compared to the past decades. The tremendous developments in this sector have impacted the area of agricultural education as well. The instructional methods and approaches used for agricultural education should be effective so that the students get a positive guidance for action along with the clear understanding of the subject. Teaching is a motivating process which is more than mere presentation of the material or passing of the message. Hence, a suitable instructional method for a given subject is to be adopted to make the teaching process alive and inspiring

to the learners.

As stated by Smith (1960), "Teaching is a system of actions intended to produce learning". Effective teaching and learning depend largely on the teaching methods or approaches employed by a teacher in order to meet the specific learning goals (Moore, 1984). The knowledge imparted by the teaching process becomes valuable only when the students are able to use it in a meaningful way.

Many researchers in the recent times have come up with findings which point out that most teachers are applying the conventional methods of teaching irrespective of the level of students and subjects dealt. In that context, this study was conducted to

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understand the perceptions and preferences of post graduate agricultural students of Kerala Agricultural University, belonging to life science group and social science groups, regarding the different instructional methods employed for teaching.

RESOURCES AND METHODS

In order to analyse the preferences and perceptions of agricultural students regarding instructional methods, 60 post graduate (PG) students were randomly selected from College of Horticulture, Kerala Agricultural University (KAU). Thirty PG students were selected from the life science streams *viz.*, Agronomy, Soil Science, Entomology, Pathology, Pomology and Floriculture, Plant breeding and Genetics, Olericulture, Biotechnology, and Plantation crops and Spices. The remaining 30 students belonged to the social science streams like Agricultural Extension, Agricultural Economics, Agricultural Statistics and Home science.

Data were collected using self administered questionnaires which had four sections. The first section included ten statements, based on literature review, to measure the perception of the students regarding the use of various instructional methods and the importance of learners' involvement in the learning process. The students were asked to either "agree" or "disagree" with the statements. Percentage analysis was used to interpret the data. In the second section, the respondents were asked to give scores to the 15 teaching methods that are commonly used for instruction based on their effectiveness to teach their respective subjects (life sciences or social sciences). The scores ranged from 1 (least effective) to 5 (most effective). The data were

interpreted by Mann-Whitney U test. In the third section, respondents had identified nine instructional methods followed in the university and selected the best method/s for learning their subjects. Ranks were allotted to each method based on the frequency of selection. Their suggestions regarding instructional methods for their subjects were gathered in the last section, which were later compiled.

OBSERVATIONS AND ANALYSIS

It was interesting to note that both life science and social science students preferred individualised instruction than group teaching methods (Table 1).

Because of the same, they liked to do learning activities by themselves than doing as group projects. Both groups found lecture and multimedia very useful in understanding their subjects. The responses highlighted that good communication skills are essential to make a teaching session of any subject interesting. When 92 per cent of life science students agreed about taking responsibility for their learning, only 84 per cent of the social science students agreed to it. Life science students found field trips and laboratory practical more important than the social science students, a fact that is well comprehensible considering the nature of the both streams (Table 1).

From the Table 2, it is clear that there are no compelling evidences to conclude that the mean scores of the two groups differ significantly, except in the case of discussion method and role play. The social science students preferred discussion method more than the life science students (Mann Whitney U=282.50, $n_1=n_2=30$, $p<0.05$, two-tailed). The social science subjects generally

Table 1 : Perceptions of the students regarding the use of various instructional methods

Sr. No.	Statements	Percentage (%) of respondents who agreed	
		Life Science (n ₁ =30)	Social Science (n ₂ =30)
1.	I prefer individualized instruction methods for my field of study	70	61
2.	Individual teaching methods my abilities and help me to achieve the best	87	83
3.	I am responsible for my instruction, my alertness and involvement counts	92	84
4.	Multimedia helps me to understand my subject well	94	91
5.	I prefer group instruction methods for my field of study	84	83
6.	Field trip is essential for my field of study as it increases observation skill.	100	82
7.	My subject can't be understood without practicals in laboratory	94	43
8.	Good communication skills make learning my subject interesting	94	100
9.	Without lecture my subject can't be understood properly	90	86
10.	Doing by myself help me to learn my subject better than doing group projects	68	73

stress on maintaining the decorum while exchanging messages or ideas, stimulate interest and help the people to interpret and analyse the new ideas in the proper ways. Discussion, which is a co-operative experience as well as intellectual teamwork, enables better understanding of the social science subjects (Kochhar, 1977). Meanwhile, Sree (2010) opined that discussion method, being a two way process which is more learner-centered and interactive, helped the students to grasp science subjects more effectively. However, the scores of the life science students don't support this view, which may be due to their overlooking the importance of this method.

In the case of role play, none of the life science students found it as effective leading to a statistically significant variation (Mann Whitney U=120.00, $n_1=n_2=30$, $p < 0.001$, two-tailed). Role play is a teaching method

used in education as well as training to bridge the gap between thought and action (Cohen *et al.*, 2013). Though it is found as an method for teaching science to the children (McSharry and Jones, 2000), this method is generally followed for cultural education or social science subjects like agricultural extension and seldom used in life science teaching. Hence, the highly significant difference between the two groups is quite understandable.

The low mean scores indicated for individual presentations, assignments, seminars, conferences, workshop, case study, and team projects show that either the students are not getting enough exposure to these instructional methods or they are unable to make use of them, whose reasons are to be analysed.

Table 3 shows that the most frequently used teaching

Table 2 : Mean scores of respondents regarding the effectiveness of instructional methods

Sr. No.	Instructional methods	Mean score for effectiveness		Mann-Whitney U values
		Life Science ($n_1=30$)	Social Science ($n_2=30$)	
1.	Lecture	3.17	3.53	337.50
2.	Discussion	3.17	3.80	282.50 *
3.	Individual presentation	2.53	3.10	341.00
4.	Assignments	2.07	2.70	353.50
5.	Seminars	2.50	3.33	415.00
6.	Workshop	2.23	2.87	343.00
7.	Conferences	2.07	2.80	358.50
8.	Brainstorming	2.17	2.97	401.50
9.	Role play	0.00	2.53	120.00***
10.	Case study	2.60	3.53	428.00
11.	Lab or hands-on trial	3.30	3.87	367.50
12.	Field visit	3.17	3.73	334.50
13.	Demonstrations	3.17	3.90	368.00
14.	Team projects	2.77	3.80	446.00
15.	AV Aids/Multimedia	4.07	3.90	403.50

* and ** indicate significance of values at $P=0.05$ and 0.01 , respectively

Table 3 : Ranking of the instructional methods

Sr. No.	Instructional methods	Rank based on frequency of selection	
		Life Science ($n_1=30$)	Social Science ($n_2=30$)
1.	Use of audio-visual aids	4	4
2.	Practical experiments and demonstrations	2	2
3.	Field visit	1	5
4.	Self study with expert guidance	5	3
5.	Group projects	6	8
6.	Individual assignments	7	7
7.	Lecture alone	9	9
8.	Lecture with discussion	3	1
9.	Team study	8	6

methods followed in the university, as identified by the 60 respondents, included use of audio-visual aids, practical experiments and demonstrations, field visit, self study with expert guidance, group projects, individual assignments, lecture alone, lecture with discussion and team study. More number of life science students opted field visit, practical experiments and demonstrations, and lecture with discussions as the most suitable methods for studying their subject. On the other hand, social science students preferred lecture with discussion, practical experiments and demonstrations, and self study with expert guidance. This variation can be attributed to the basic differences between these two streams of subjects.

The responses are in line with Auwal (2013) finding that demonstrations are effective in teaching agricultural science. Another encouraging point is that social science students gave a favourable feedback about self study. This supports the finding of Rhoads and deHaan (2013) that students will exhibit a positive attitude towards self-study. In both groups the lowest ranks were attributed to lecture alone. Shah and Rahat (2014) had stressed that the activity based teaching was much effective than the lecture method for teaching of science subjects.

The suggestions collected from the respondents were compiled. The life science students recommended including more field visits, demonstrations by experts and visits to National Research Centres and other prestigious institutions in their syllabus. They wanted to get introduced to the recent developments in their study area. They also suggested providing chances to participate in group projects in collaboration with reputed public and private institutions/companies. The social science students wanted more practical sessions, field visits, and familiarisation with software programmes that are helpful for social sciences. They highlighted the need for inclusion of more multimedia in teaching.

Conclusion:

The modern view on instructional technology is that interactive teaching methods are grounded in the constructivist theory, and they ensure better student performance outcomes, while fostering greater participation, self confidence and leadership ability (Karagiorgi and Symeou, 2005; Yoder and Hochevar, 2005). The findings of the present research echoed this

idea as they were interested in active learning methods that engaged them in meaningful learning activities. The study also exposed the student perceptions and preferences regarding the effective instructional methods suitable for their field of study.

The perceptions of students regarding the suitable teaching methods and the suggestions put forward by them will help the agricultural universities to analyse the instructional methods currently followed and to incorporate those methods in the curricula which would improve student learning.

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