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Perception of students and teachers towards reforms on agricultural education subject matter

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Abstract

All educational process depends upon the subject matter, which the teacher uses in teaching the students; a reform in agricultural educational curriculum will bring about a desirable change in the knowledge, attitude and skill of the learners and for sustaining in the modern educational aspects there is a need of reform in curriculum of the agricultural students. In this paper, the perception of teachers and students towards reforms of agricultural education has been studied. The study was conducted at Banaras Hindu University (BHU) in the Department of Extension Education, Institute of Agricultural Sciences. A sum of 775 students and teachers were considered which included 356 students of M. Sc. (Ag.), 292 Ph.D. scholars and 127 teachers from the Institute of Agricultural Sciences, BHU. Twenty per cent from each category of population were selected randomly making the sample size of 156 as the respondents. The data was collected by the survey method. Both students and teachers (100 per cent) agreed that there should be flexibility of University in adoption of location specific curriculum. It was found that 100 per cent of teachers in comparison to students (89.92%) agreed that the curriculum or syllabus should be prepared in collaboration with the industry and government agencies. Other findings are part of the agriculture syllabus may be oriented toward farmer's problem, there should be up-gradation of subject matter according to need of region and country, basic laboratory techniques should be taught to every U.G. student, curriculum should be holistic with components of rural and agricultural developments and many more. The study reveals more interesting reforms for agricultural education in terms of subject matter described in this original research article.

Keywords: Reforms, agricultural education, perceptions, subject matter, curriculum

Introduction

In 1958, the University Grants Commission accorded the status of a Deemed to be University to IARI, to impart post graduate education leading to M.Sc. and Ph.D. degrees. This was the beginning of restarting and modernization of higher agricultural education in the country. The newly established Post Graduate School of IARI, developed regulations with the objectives of (a) integrating teaching, research and extension, (b) promoting multi-disciplinary team work, (c) introducing flexible course credit system with continuous internal evaluation, (d) promoting organizational and operational autonomy and (e) working towards the philosophy of service to society by solving social and economic problems, particularly of rural India. The first State Agricultural University (SAU) was established in 1960 at Pantnagar, as UP was the only State which developed a blue-print to establish an SAU on 16000 acre Government farm (the Tarai State Farm). Government agreed to the setting up of the Agricultural University at Pantnagar only as an experimental measure. Soon, new SAUs were established at Bhubaneswar (1962) and Ludhiana (1962) Hyderabad (1964) Jabalpur (1964), Bangalore (1965) and others.

There is no system in place, which could judge the performance of SAUs. In 2014, TNAU was the best SAU at 74 position followed by IARI at 138 position and HAU at 254 position amongst the Indian Universities in the Web Ranking, whereas NTU Ranking of world Universities, among the top 300 universities only IARI was represented at 210 position based on quality of publications and their citations ICAR has instituted a prestigious award to encourage one SAU/DU every year, to encourage agricultural education. It is good to see that IARI has found a place in World Ranking. We need a larger representation of Agricultural Universities in World Ranking (Varma, 2014) [9].

A series of SAUs were established in the 1960s and 1970s and in the initial decades contributed immensely to build trained human resources and to usher in the Green, Yellow, White and Blue Revolutions in the country. Between 1960 and now, production of food crops, horticultural crops, livestock, and fisheries has increased four-to-ten-fold. The Rainbow Revolution had halved the incidences of hunger and poverty in the country, whereas the population had more than doubled.

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But, despite the Rainbow Revolution and comprehensive National Agricultural Research and Education System (NARES) comprising 73 Agricultural Universities (AUs) consisting of 61 SAUs, 5 DUs, 3 Central Agricultural Universities (CAUs) and 4 Central Universities with Agriculture Faculty, and 101 ICAR institutes, often due to reasons beyond the national level production, the country is still home to almost one-fourth of the world's hungry and poor (Sebby, 2010) [6]. Over 40% of world's undernourished children are our own children. It is estimated that the high under-nutrition in the country annually costs about 3% of the national GDP, *1 et al* one the entrenched human deprivation. The Second UN International Conference on Nutrition, 2014, had pledged to 'improve nutrition by strengthening human and institutional capacities to address all forms of malnutrition through, inter-alia, relevant scientific and socio-economic research and development.' Moreover, the income inequities, especially between farmers and non-farmers, and other asymmetries, have widened, reflecting the stunted structural changes in the country.

Current System of Agricultural Research

To increase productivity of per unit of land, there is need to develop a location specific technology package by a multidisciplinary team. This package of best practices should be economically viable and environmentally sound. Due to various constraints within Indian Council of Agricultural Research (ICAR), research has lagged behind and there is technology fatigue after first Green Revolution. In 2005, the Minister of Agriculture (Mr. Sharad Pawar) appointed ICAR Reorganization Committee (headed by Dr RA Mashelkar) to suggest the reorganization and procedural changes in the ICAR. Amongst many recommendations made by this Committee in its report, "Accelerating ICAR's journey towards excellence", was that India's Prime Minister should head ICAR. The same year another Committee, "Task Group (headed by Dr MS Swaminathan) on revamping and refocusing of national agricultural research" was constituted by India's Planning Commission. The Report admitted that bureaucracy was a problem, and added that political and administrative tinkering with staff selection process led to recruitment of subordinate scientists. The Group recommended setting up a National Board for Strategic Research in Agriculture that would act as an umbrella organization and coordinate several government agencies that fund research in overlapping areas of plant and animal sciences. However, these recommendations have not been fully implemented. The ICAR needs major restructuring to be able to meet the needs of the 21st century. The ICAR is operating currently as a "complete" bureaucracy. Various reports and published papers (World Bank, 1983) have pointed out that in India, the research relevant to farmers' needs is not usually done, and more importantly the contact between research team and farmers is almost nonexistent due to fragmented responsibilities of extension between state governments and universities. In January 2011 the ICAR prepared a paper 'Vision 2030' to improve the performance of the Council. However, human resources to realize the vision are not adequate; hence there is a need for modernizing higher Agricultural Education (Tamboli and Nene, 2013) [7].

ICAR Initiatives for restructuring agricultural education

Several of the ICAR initiatives, such as the Rural Entrepreneurship and Awareness Development Yojana (READY), encompassing Experiential Learning Programme

(ELP) and Rural Agricultural Work Experience (RAWEX) and in-plant or industrial attachment are highly relevant. The Council has put up efforts to attract talented students and young faculty, such as the Agricultural Science Pursuit for Inspired Research Excellence (ASPIRE) programme. Along with Ready, Attracting and Retaining Youth in Agriculture (ARYA) programme, is most timely, and could mutually stimulate the Farmer First campaign of ICAR. These various initiatives should be implore to do something and regularly monitored for their implementation and impact assessment. A few projects, such as the Bill and Melinda Gates Foundation (BMGF) initiatives, are innovating in the areas of social engineering and humanity towards enhancing and stabilizing livelihood security of resource-poor and vulnerable farmers. Incubation centres should be created in research university campuses. Such settings become incubators for new ideas and stimulate and trigger young minds to innovate. Education for Agriculture in the 21st Century and the third generation universities should have the goal that every agricultural graduate becomes an entrepreneur. Thus, as suggested by the Committee, business management should be mainstreamed in major applied courses, e.g. Seed Technology, Dairy Technology, Fish Technology, Food Processing etc., besides establishing new Faculties or Departments of Agricultural Business Management. Private companies and cooperatives, manufacturing and distributing agricultural inputs and related products should have other things being equal; give preference to such agricultural graduates for employment and granting licenses and dealerships. As many other initiatives will be added up as for time being (ICAR, 2017) [3].

Terms used in the paper for discussion (Biswas *et al.*, 2019) [1]

Perception

According to Lindsay and Norman (1977) [4], perception is closely related to attitude. Perception is the process by which organisms interpret and organize sensations to produce a meaningful experience of the world.

Reform

The term reform refers to make changes in (something, especially an institution or practice) in order to improve it. Reforms, those bring about meaningful and lasting changes in higher education are hard to implement. They demand leadership, time, financial resources, and persistence. Reforms on this scale are not one-dimensional. They must often encompass policy and strategy formulation, stakeholder cooperation and involvement, governance changes, increased university autonomy, curriculum updating, pedagogical capacity building, increased practical work by students, and stronger links to rural communities (Maguire, 2012) [5]. In this paper, the terms have been conceptualized as the feelings, suggestions, and inputs for change in higher agricultural education.

Factors of reforms: Yonggong and Jingzun (2004) [10] discussed about the factors which led to the reforms are of the following two types:

External factors

1. The labour market required a higher level of qualifications and needed integrated skills for resolving the problems existent in the day-to-day management and technical servicing.

2. The governmental initiatives were undertaken to improve the efficiency of investment in education and to reduce financial pressure.

Internal factors

1. The need to increase teaching and research capacities by re-arranging the relevant faculties and allocating and utilizing more efficiently the human resources in teaching and research.
2. The desire to improve financial investment efficiency by increasing both the number of students and improving efficiency in education.

Objective

In accordance with the above stated issues, the objective of the paper is to make people and researchers aware of the different reforms perceived by the students and teachers in agricultural education in terms of subject matter.

Research Methodology

The study was conducted at the Department of Extension Education in Institute of Agricultural Sciences of Banaras Hindu University in Varanasi, Uttar Pradesh. Altogether, 775 respondents were selected including 356 students of M. Sc. (Ag.), 292 students of Ph.D. along with 127 teachers in the academic session of 2016-17 which were taken as the sample of the study. The teachers and students were selected by the proportionate random sampling technique with 20 per cent allocation from each category. The sample size which was obtained by the addition of these respondents was 156 (129 students and 27 teachers). Statistical methods such as frequency and percentage were used for the meaningful analysis of the collected data.

Results and Discussion

On the basis of the literature survey, consultation with the agricultural experts and findings of the study, the different dimensions of reforms on agricultural education are explained below:

Perception related to subject matter in agricultural education

Every educational process depends upon the subject matter, which the teacher uses in teaching the students; a reform in agricultural educational curriculum will bring about a desirable change in the knowledge, attitude and skill of the learners and for sustaining in the modern educational aspects there is a need of reform in curriculum of the agricultural students. For this aspect, the researcher prepared statements and asked the students and teachers to express their opinions in terms of agree and disagree. The statements are up gradation of subject matter according to need of region and country, non credit courses should not be compulsory, new schemes related to agriculture should be included as subject matter for both students and farmers, fifty percent practical and fifty percent theory in the academic curriculum, basic laboratory techniques should be taught to every U.G. student, Postgraduate course curriculum should have choice based optional subject should also be included, topics of Current affairs in agriculture may be included into the curriculum, part of the Agriculture syllabus may be oriented toward farmer's problem, the curriculum or syllabus should be prepared in collaboration with the industry and government agencies, flexibility of University in adoption of location specific curriculum and curriculum should be holistic with components of rural and agricultural developments.

Table 1: Distribution of respondents according to their perception towards reforms on agricultural education in terms of subject matter

S. No.	Statements	Students Agree		Teachers Agree	
		Frequency	Percentage	Frequency	Percentage
1	Up-gradation of subject matter according to need of region and country.	118	91.47	26	96.30
2	Non credit courses should not be compulsory.	93	72.09	24	88.89
3	New schemes related to agriculture should be included as subject matter for both students and farmers.	114	88.37	21	77.78
4	Fifty percent practical and fifty percent theory in the academic curriculum.	95	76.34	14	51.85
5	Basic laboratory techniques should be taught to every U.G. student.	115	89.15	25	92.59
6	Postgraduate course curriculum should have choice based optional subject should also be included.	83	64.34	24	88.89
7	Topics of current affairs in agriculture may be included into the curriculum.	107	82.95	16	59.26
8	Part of the agriculture syllabus may be oriented toward farmer's problem.	105	81.40	23	85.19
9	The curriculum or syllabus should be prepared in collaboration with the industry and government agencies.	116	89.92	27	100
10	Flexibility of university in adoption of location specific curriculum.	129	100	27	100
11	Curriculum should be holistic with components of rural and agricultural developments.	99	76.74	27	100

The first statement of table 1 shows that students (91.47%) and teachers (96.30%) agreed that there should be up-gradation of subject matter according to need of the region and country. Similarly, Govindagowda *et al* (2012) ^[2] reported that 48 % students agreed that the teachers in the college keep the students informed about the updated knowledge of the subjects. This agreement is highly correlated with the statement that teachers are highly specialized, qualified and skill oriented and situate their efforts in giving updated knowledge to students.

Second statement shows that more percentage of teachers (88.89%) in comparison to students (72.09%) agreed that non credit courses should not be compulsory because it creates burden towards student's academic performance.

Third statement shows that more percentage of students (88.37%) in comparison to teachers (77.78 %) agreed that new schemes related to agriculture should be included as subject matter for both students and farmers so that both farmers and students can get updates easily.

Fourth statement shows that higher percentage of students (76.34%) agreed that there should be 50 per cent practical and 50 per cent theory in the academic curriculum so that students would take more interest in studying through enhanced understanding whereas; low percentage of teachers (51.58%) agreed about the statement and opined that it could not be possible as in most of the institutions there are more percentage of theory as compared to practical classes. Similarly, Govindagowda *et al*. (2012) ^[2] reported that 62 %

of students agreed that practical sessions were correlated to theory, as they get opportunity to learning by doing as it is known that 'practice makes man perfect.' Other 39 % students agreed that as a part of the course work, teachers arranged field visits so students were exposed to practical life which helped them to improve their communication skill and 54 % students agreed that practical field visits were helpful to understand and analyse the field situation.

Fifth statement shows that there is higher percentage of teachers (92.59%) as compared to students (89.15%) who agreed that basic laboratory techniques should be taught to every under-graduate (U.G.) student because when they went for higher studies then it would help them to do their research work properly.

Sixth statement shows that more percentage of teachers (88.89 %) agreed that in post-graduate (P.G.) course curriculum choice based optional subject should also be included because not every student want to study all the optional courses; so flexibility in choosing the optional subjects should be carried out whereas, there is lesser percentage of students (64.34%) who agreed to the statement as they gave more emphasis to the compulsory subjects only.

Seventh statement reveals that more students (82.95%) agreed that topics of current affairs in agriculture may be included into the curriculum so as to get updated knowledge about the society and nations whereas less teachers (59.26 %) in comparison to students agreed about the statement.

Eighth statement indicates that nearly similar percentage of students (81.40%) and teachers (85.19%) agreed that part of the agriculture syllabus may be oriented toward farmer's problems because if these subjects were taught to students then they would understand the problems of farmers and find the solutions and when needed they could help the farmers properly. Similarly, Govindagowda *et al.* (2012)^[2] explained that 48% students agreed that agriculture is more suited for students from rural areas, as agriculture is a way of life for the rural people and students from rural areas, who join agriculture, have a pre-practical exposure in agriculture practice and hence it will help them to learn more practically and excel in their field.

Ninth statement indicates that higher percentage of teachers (100%) and students (about 90%) agreed that the curriculum or syllabus should be prepared in collaboration with the industry and government agencies as this could make the students technologically more sound.

Tenth statement shows that all the students and teachers (both 100%) agreed that there should be flexibility of university in adoption of location specific curriculum so as to be more adopting about the changing trends of the society. Similarly, Tewari (2014)^[8] opined that teachers perceived that the design of a curriculum which could adequately train the students to meet the challenges of this highly competitive world is the need of the hour.

Eleventh statement reveals that highest percentage of teachers (100%) in comparison to students (76.74%) agreed that curriculum should be holistic with components of rural and agricultural developments. Similarly, Tewari (2014)^[8] reported that students perceived that there should be inclusion of more number of rural study tours and trips in the curriculum so that curriculum could be more fruitful in the rural and agricultural developments.

Conclusion

The paper concludes that there should be up-gradation of the subject matter because without up-gradation innovative ideas

regarding subject matter can't be explored. Integration of various reforms in the course curriculum in terms of up-gradation of recent agricultural schemes, current innovative technologies, institute-industry collaboration which comes under public-private partnership, teaching of basic laboratory techniques to under graduate students which helps them in their research oriented post graduate curriculum etc. Thus these will lead to the holistic development of the students in terms of great researchers, scientists, rural developers for the sake of farmers' community and create awareness among them for the changing and emerging trends of food security in terms of global sustainability.

References

1. Biswas N, Ghadei K, Biswas N. Perception of students and teachers towards reforms on agricultural education teaching and learning. *Current Journal of Applied Science and Technology*. 2019; 38(6):1-6.
2. Govindagowda V, Thimmegowda MN, Doddamani A. Attitude of students towards agricultural education and their perceived organizational atmosphere. *Advance Research Journal of Social Science*. 2012; 3(1):77-80.
3. ICAR. Fifth Deans' Committee Report. Agricultural Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhawan-II, Pusa, New Delhi, 2017. Retrieved from <https://www.icar.org.in/files/FifthDeansCommitteeReport-22022017.pdf>
4. Lindsay P, Norman DA. *Human Information Processing: An Introduction to Psychology*. Harcourt Brace Jovanovich, Inc., 1977.
5. Maguire CJ. *Reforming Public Agricultural Education at the Tertiary Level*. Agricultural Innovation Systems: An Investment Sourcebook, 2012. Retrieved from <http://books.google.com>.
6. Sebyy K. *The Green Revolution of the 1960's and its Impact on Small Farmers in India at Lincoln, Nebraska*, published U.G. Thesis, 2010.
7. Tamboli PM, Nene YL. *Modernizing Higher Agricultural Education System in India to Meet the Challenges of 21st Century*. Asian Agri-History Foundation. 2013; 17(3):251-264.
8. Tewari G. *Academic Performance of The Students (APS) In Undergraduate Degree Program: Perception of Stakeholders at University of Agricultural Sciences, Bangalore*, published M.Sc. Thesis, 2014.
9. Varma A. *Agricultural Education in India: Imaging Possibilities to Meet Challenges in the Changing World*, National Agricultural Education Day Lecture, IARI, 2014. Retrieved from https://www.iari.res.in/files/Latest-News/NAED_Lecture-13122014.pdf
10. Yonggong L, Jingzun Z. *The reform of higher agricultural education institutions in China*, FAO and UNESCO-IIEP, 2004. Retrieved from <https://unesco.org>.