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Perceived Constraints and Suggestions in Utilization of Instructional Technology by Teachers of Acharya N.G. Ranga Agricultural University

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A B S T R A C T

The study was conducted in Acharya N.G. Ranga Agricultural University, Lam, Guntur. A comprehensive personal interview schedule was used for collecting information. All the teachers available at the time of study from five constituent agricultural colleges of ANGRAU were selected as sample for the study. The respondents were asked to express the constraints and suggestions to overcome the constraints in utilization of Instructional Technologies. The weighted sum for a particular constraint was worked out by summing up of all the individual score of each constraint elicited by the respondents. The ranking of constraints was done according to the weighted sum and percentage of each statement.78.89 per cent of respondent felt in adequate funding as most important constraint. Other important constraints were crowded class (73.89%), lack of time of teachers to master the emerging technologies (69.63%), lack of administration support for instructional technology acquisition (65.93%), lack of facilities to accommodate new technologies (65.00%) and lack of teacher training in instructional technology (63.89%). Major suggestions given to overcome the constraints were, involvement of teachers in teaching than non-academic work (88.89%), maintenance of proper teacher-student ratio (86.11%), recruitment of teachers for reducing workload (79.44%), providing advanced trainings for teachers (76.11%), provision of sufficient funds in time (73.33%). Majority of constraints were related with infrastructure and administration.

Introduction

The Indian system of higher agricultural education is facing today many challenges today due to globalization and liberalization. The competition will essentially be for offering quality education recognized at the International level and relevant to the local needs. The major issue is how to raise the quality and standards of Indian agricultural education and make it globally competitive, locally relevant and enable it to offer marketing paradigm appropriate for developing societies. Increase in the number of educational institutes is not the answer of all challenges. Rather ensuring quality of

education by providing necessary facilities and adopting modem Instructional Technologies is more important for Indian higher agricultural education system.

At present India has one of the world's largest agricultural education system with sixty four State Agricultural Universities (SAUs), three Central Agricultural University (CAU), four Deemed Universities (DUs) and four general Central Universities with Agriculture faculty (www.icar.org.in).

These institutions enroll on annual basis, about 15,000 students at UG level, over 7,000 students at PG and 1700 at Ph.D. level. Now India has more than 30000 scientists in this field. Agricultural education has to keep pace with fast changing national and international scenario.

The present situation demand integration of modern instructional technology in higher agricultural education for better learning to facilitate and undertake human capacity building for developing self-motivated professionals and entrepreneurs in view of the changing scenario of globalization of education, emergence of new areas of specialization such as Intellectual Property Rights (IPRs), other International Trade related areas (*ICAR Draft document of National Agricultural Education Project (NAEP), 2012*). Most of the Indian colleges and universities lack high-end research facilities. Under-investment in libraries, information technology, laboratories and classrooms makes it very difficult to provide quality instruction. This gap has to be bridged if we want to speed up our path to development (Singh, 2012).

Instructional technology is a vital concept in education. Education is literally a comprehensive process and imparting instruction is one of the sub-process of achieving the goals and objectives of it. Accordingly technology of instruction may be considered as one of the parts and sections of the entire event relating to instructional technology. In a strict sense, instructional technology is concerned with determining and providing appropriate stimuli to the learner to produce certain types of responses for making learning more effective. Thus, the constraints experienced by the teachers in utilization of Instructional Technology need to be studied in depth.

Materials and Methods

Acharya N.G. Ranga Agricultural University (ANGRAU) was selected as the locale of study. There are eleven constituent colleges of the Acharya N.G. Ranga Agricultural University (ANGRAU). Out of eleven Colleges, five agricultural colleges namely S.V. Agricultural College, Tirupati, Agricultural College, Bapatla, Agricultural College Rajamahendravaram, Agricultural College Naira and Agricultural College Mahanandi were selected.

All teachers from each college were selected as sample for the study. Data were collected with the help of interview schedule from November 2015 to January 2016. Data were collected from the respondents through personal interview method. The respondents were asked to express the constraints and suggestions to overcome the constraints in the utilization of instructional technologies. Constraints elicited by the teachers were operationally defined as unsatisfactory situations in utilization of instructional technology as perceived by the teachers. A set of 20 important reasons were identified in consultation with faculty members and experts in the field of Agricultural Education. They were measured 3 point continuum *i.e.* most serious constraint, serious constraint and least serious constraint by giving scores 3, 2

and 1 respectively. Weighted sum and percentages were calculated and ranking was given in the order of magnitude.

Results and Discussion

Constraints

Constraints faced by respondents in utilization of instructional technologies, with their ranking were presented in table 1, which reveals us that major constraint ranked I) Inadequate funding (78.89%), II) Crowded class (73.89), III) Lack of time of teachers to master the emerging technologies (69.63), IV) Lack of administration support for instructional technology acquisition (65.93),V) Lack of facilities designed to accommodate new technologies (65.00), VI) (Fig. 1 and 2).

Lack of teacher training in instructional technology (63.89), VII) Lack of technical support and maintenance(61.85%), VIII)Lack of awareness by administrators and policy makers (60.56%), IX) Lack of internet connection(58.89%), X) Misconception about right concept of Instructional Technology (56.85%), XI) Low staff morale(55.00%), XII) Shortage of specialists in Instructional technology(53.89%), XIII)Epileptic supply of electricity(51.67%), XIV)Lack of support from peers in securing instructional technology(51.11%), XV)Cost of instructional technology overweighs benefits(49.63%), XVI) Resistance to change by educators(47.96%), XVII)

High cost of instructional technology software (45.93%), XVIII)High cost of instructional technology hardware(42.96%), XIX) Lack of students' interest(41.85%), and XX)other perceived constraints include are lack of awareness about different software being used for instructional purpose, over burdened in UG, PG classes due to shortage of teachers, and traditional mindset within the administrator as well as faculty members (38.89%).

Inadequate funding*:* This is a major problem because advanced budgeting provisions are not being made by the administrators or policy makers.

Crowded class: This problem arose because the number of the teachers is constant till the inception of the colleges but the strength of the students is increasing year by year.

Lack of time of teachers to master the emerging technologies: This was a problem because of non-academic duties and additional duties assigned to the teachers. In addition to this more tour programmes related to supervision of RAWE Programme, Conducting examinations at affiliated colleges, moderation of semester final examination question papers, external evaluation duties resulting in dearth of time to learn and master emerging technologies.

Lack of administration support for instructional technology acquisition: This problem is because of lack of awareness pertaining to the importance of instructional technology and advances in instructional technology.

Lack of facilities to accommodate new technologies: This is because of absence of sufficient infrastructural facilities and problems related to electricity and internet connection, as well as lack of awareness of new technologies in instructional technology.

Lack of teacher training in instructional technology: This was a problem because of teachers are rarely trained in all aspects, which include instructional technology.

VII) Lack of technical support and

maintenance: This problem is because of lack of availability of technician for developing and maintaining instructional technology materials and devices as the sub staff were recruited with same age old designations and they are not specially trained for this purpose.

Lack of awareness by administrators and policy makers: This is a problem due to lack of attention of administrators and policy makers because of busy schedules.

Lack of internet connection: This problem is because of lack of separate budget allocation for rental charges for internet connection.

Misconception about right concept of instructional technology: This problem is because of lack of orientation of concepts of instructional technology

Low staff morale: Lack of awareness of advanced technologies and training resulted in poor confidence levels of the staff.

Shortage of specialists in Instructional technology: This is a problem because there is no option

Epileptic supply of electricity: This problem is because of shortage of electricity in the state and most of the times the interruption in power is caused by natural disasters like heavy rainfall with winds.

Lack of support from peers in securing instructional technology: This is a problem because of peers are more interested in securing other materials for their labs and departments as a priority rather instructional technology.

Cost of instructional technology overweighs benefits: The initial cost of instructional technology is more. But on a long run the institution will be benefitted acquiring instructional technology.

Resistance to change by educators: Resistance to change seems not to be a barrier itself; instead, it is an indication that, there are reasons why resistance to change occurs. The change from a present level to a desired level of performance is delayed by resisting (discouraging) forces such as lack of technical support, teacher expertise, or time for planning. Teachers are unlikely to use new technologies in their teaching if they see no need to change their professional practice. They showed that teachers who resist change are not rejecting the need for change but lack the necessary education in accepting the changes and are given insufficient long-term opportunities to make sense of the new technologies for themselves.

High cost of instructional technology software: Most of the instructional technology software are costly, because they are developed by the commercial firms.

High cost of instructional technology hardware: Initial cost of instructional technology hardware are costly

Lack of students' interest: This is a minor constraint because of problems associated with lack of skill in designing, developing and utilization of instructional technology

Other perceived constraints include are lack of awareness about different software being used for instructional purpose, over burdened in UG, PG classes due to shortage of teachers, and traditional mindset within the administrator as well as faculty members.

Table.1 Constraints in utilization of instructional technology n=180

S. No.	List of problems/Constraints	Weighted sum	%	Rank
1.	Inadequate funding	426	78.89	1
2.	Crowded class	399	73.89	2
3.	Lack of time of teachers to master the emerging technologies	376	69.63	3
4.	Lack of administration support for instructional technology acquisition	356	65.93	4
5.	Lack of facilities designed to accommodate new technologies	351	65.00	5
6.	Lack of teacher training in instructional technology	345	63.89	6
7.	Lack of technical support and maintenance	334	61.85	7
8.	Lack of awareness by administrators and policy makers	327	60.56	8
9.	Lack of internet connection	318	58.89	9
10.	Misconception about right concept of Instructional Technology	307	56.85	10
11.	Low staff morale	297	55.00	11
12.	Shortage of specialists in Instructional technology	291	53.89	12
13.	Epileptic supply of electricity	279	51.67	13
14.	Lack of support from peers in securing instructional technology	276	51.11	14
15.	Cost of instructional technology overweighs benefits	268	49.63	15
16.	Resistance to change by educators	259	47.96	16
17.	High cost of instructional technology software	248	45.93	17
18.	High cost of instructional technology hardware	232	42.96	18
19.	Lack of students' interest	226	41.85	19
20	Any other(lack of awareness about different software being used for instructional purpose, over burdened in UG, PG classes due to shortage of teachers, and traditional mindset within the administrator as well as faculty members)	210	38.89	20

Table.2 Suggestions to overcome constraints in utilization of instructional technologies n=180

S. No.	List of Suggestions	Rank	F	%
1.	Involvement of teachers in teaching than non-academic work	1	160	88.89
2.	Maintenance of proper teacher-student ratio	2	155	86.11
3.	Recruitment of teachers for reducing workload	3	143	79.44
4.	Providing advanced trainings for teachers	4	137	76.11
5.	Provision of sufficient funds in time	5	132	73.33
6.	Provision of technical staff to develop, handle and maintain Instructional materials and devices	6	122	67.78
7.	Establishing smart classrooms	7	118	65.56
8.	Provision of uninterrupted internet and power supply	8	102	56.67
9.	Motivating teachers to use educational technologies	9	97	53.89
10	Organizing seminars, workshops related to Instructional technology	10	88	48.89

Fig.1 Constraints in utilization of instructional technology

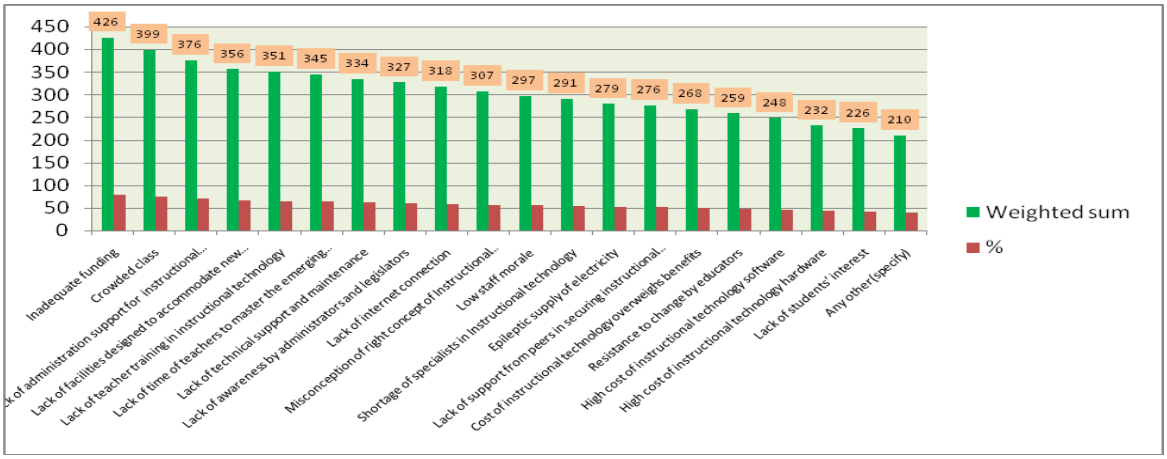
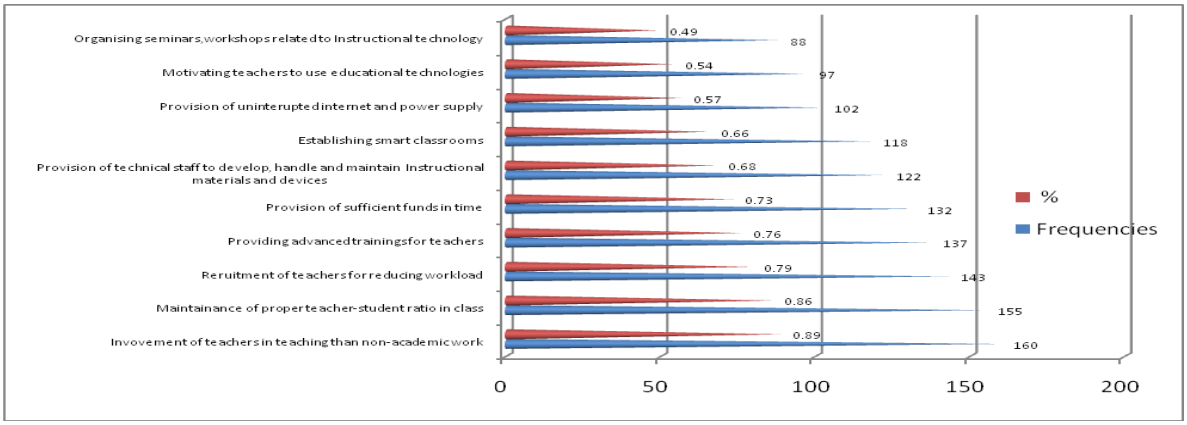


Fig.2 Constraints in utilization of instructional technology



Suggestions

It can be observed from the table 2 that major suggestion as elicited by respondents to overcome constraints in utilization of instructional technologies was I)Involvement of teachers in teaching than non-academic work(88.89%) II) Maintenance of proper teacher-student ratio in class (86.11%) III) Recruitment of teachers for reducing workload (79.44%) IV) Providing advanced trainings for teachers (76.11%) V) Provision of sufficient funds in time (73.33%) VI) Provision of technical staff to develop, handle and maintain Instructional materials and devices (65.56%) VII) Establishing smart classrooms (67.78%) VIII) Provision of uninterrupted internet and power supply (56.67%) IX) Motivating teachers to use educational technologies (53.89%) and X) Organizing seminars, workshops related to Instructional technology (48.89%)

Involvement of teachers in teaching than non-academic work: This is the major suggestion elicited by the respondents which facilitates devotion of time for designing and developing instruction technologies by the teachers.

Maintenance of proper teacher-student ratio: In some campuses the teacher-student ratio is not appropriate, which results in crowded classrooms. This can be

addressed by maintenance of proper teacher-student ratio

Recruitment of teachers for reducing workload: This is a major suggestion offered by the respondents which reduces from heavy workload.

Providing advanced trainings for teachers: By Providing advanced trainings for teachers the efficiency of teacher in utilisation of instructional technology

Provision of sufficient funds in time: This facilitates acquisition of instructional technology in time with proper planning in advance

Provision of technical staff to develop, handle and maintain instructional materials and devices: This can assure timely availability of technical personnel for addressing the issues in maintenance problems

Establishing smart classrooms: Ensures efficient utilization of instructional technology for effective teaching

Provision of uninterrupted internet and power supply: Instructional technology can be utilized without interruption

Motivating teachers to use educational technologies: By motivating teachers utilization of instructional technology can be enhanced

Organizing seminars, workshops related to Instructional technology: This will result in capacity building of the teachers and efficiency in utilization of instructional technology by boosting up their confidence and efficiency.

By analyzing the above stated constraints and suggestions it can be concluded that major constraint faced by respondents in utilization of instructional technologies were related to infrastructure and administration aspects. Hence proper infrastructure facilities should be facilitated for efficient utilization of instructional technologies. Few of the major suggestions as elicited by respondents gives us an overview about steps needed to be taken for efficient utilization of instructional technologies. Thus more responsibility relies on University administration to provide sufficient funds and implement strategies for capacity building of the teachers for effective utilization of instructional technologies.

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