



Evaluation of Diploma in Dairy Technology (DDT) Programme Offered through Open and Distance Learning: Analysis of Learners Feedback

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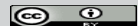
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ABSTRACT

Programme evaluation is a continuous process to obtain feedback on the programme's success and undertaken corrective measures to enhance the quality of the programme delivery and increase its acceptability among the stakeholders. Indira Gandhi National Open University (IGNOU) offers various academic programmes through its learners' support network across the countries. The educational programmes are conceived and developed at the Schools of Studies and implemented in the field by Regionale Centres (RCs) through its Learners Support Centres (LSCs). Accordingly, Schools of Agriculture(SOA) designed and launched several programmes at the postgraduate diploma, diploma and certificate level, and some useful awareness programmes. These programmes have attracted many learners over the years for their pursuit of learning. The rich programme content enables successful learners to get engaged themselves in entrepreneurship and gainful self-employment in the agriculture and allied sector. The present study evaluates the usefulness and effectiveness of the Diploma in Dairy Technology (DDT) offered by IGNOU by critically analysing its academic and administrative aspects. Therefore, the emphasis of the study remained on programme development and delivery issues. It included assessing the quality of self-learning material (SLM), counselling sessions to support learners, using assignments as a continuous evaluative tool, and term-end examination, considering mainly the learners' and Academic Counsellors (ACs) perceptions. The issues and concerns of

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the DDT programmes evaluated were done as per CIPP (Context, Input, Process and Product) programme evaluation model. The fundamental objective of this study is to provide an analytical and rational basis for programme decision-making for the DDT programme, examined through a different aspect of evaluation – context, input, process and product evaluation. This study is the outcome of the survey conducted among the learners who completed the DDT programme. The essential parameters included in the programme assessment are assessing programme effectiveness in terms of knowledge generation, employability, entrepreneurship skills etc. Likert five-point scale, used for collection of data and the result of the same incorporated in the coherent frame of the study. The study's findings further strengthen the programme development and delivery and provide constructive input to the university fraternity to improve the existing programme development and delivery. Thus, it is an evaluative study based on the learners' feedback enrolled with the DDT programme under Lucknow and Aligarh region.

Keywords: Agriculture, CIPP, Programme Evaluation, DDT, IGNOU

IGNOU, School of Agriculture (SOA), established in 2005 to develop academic programmes in agriculture and allied fields to benefit people engaged in this field. By pursuing these programmes, relevant skills indoctrinated among learners so that capable entrepreneurs and agri-business managers produced. In addition, these programmes will provide opportunities for self-employment for youth in rural areas. Therefore, open and distance learning (ODL) plays a catalytic role in pastoral education, developing a new breed of skilled entrepreneurs and increasing employment opportunities, resulting in a higher level of livelihood and enhanced earnings and a conducive work environment at the grass-root level (IGNOU, DDT2015). Furthermore, these efforts will help address poverty alleviation and food security issues as envisaged in sustainable development goals on no poverty and zero hunger represented by SGD 1 and 2 (United Nations). Therefore, the objective was to develop the academic programme and focus on the extension activities. Furthermore, the SOA aimed to improve and sustain human life and productivity in the agriculture and allied sectors by developing various programmes. Therefore it emphasised harnessing the convergence between ODL and conventional system through national and international linkages (IGNOU, DDT 2015).

The SOA currently offers 17 programmes ranging from Doctor of Philosophy to certificate and awareness programmes covering agriculture, extension, dairy technology, food safety and quality management, plantation management, agriculture policy, value addition from fruits, vegetable cereals, pulses and oilseeds, meat technology, fish product technology, watershed management, organic farming, sericulture, water harvesting and management, dairy farming, pest management technology in potato and betel vine cultivation (IGNOU Common Prospectus 2020).

The present study mainly covers learners registered in IGNOU Regional Centres (RCs) Lucknow and Aligarh from 2007 to 2015 in the DDT programme. The DDT is an important

SOA programme, and 337 learners registered under this programme during the reference period. The present study critically examines the different aspects of programme delivery such as goals of the programme, effectiveness of self-learning material and counselling sessions organised for the learners. It also examines the impact of assignments on the overall success of the learners, IGNOU examination system, besides opinion of the academic counsellors on different aspects of the programme using the Context, Input, Process and Product evaluation model. Thus, the study critically analysed the perceptions of the learners obtained on five points Likert scale on different aspects of programme development and delivery and give suggestions of the identified gaps for further improvement.

LITERATURE REVIEW

ODL, the programme evaluation, consists of assessing programme objectives, course content, design, support services, and evaluation practices through the learners' feedback (Sangai and Garg, 2009). There is substantial literature on programme evaluation that deals with the objective approaches and programme evaluation methods (Mishra *et al.* 2008). Programme evaluation is a systematic way of gathering, analysing and utilising information to answer basic questions about projects, policies and programmes (Pradhan and Ramanujam, 2006). Methodologies included cross-sectional surveys and a review of the literature to gather data. Miriam *et al.* (2015) argued that programme evaluation in open and distance learning guides the decision-makers, programme leaders, programme coordinators with an overall objective to improve service delivery and client satisfaction. Dimri *et al.* (2019) emphasised that learner's satisfaction is one of the essential components of the programme development and delivery and timely redressal of student's grievances improves their overall performance.

Woodley and Kirkwood (1988) envisaged that distance education integrated with new technologies could be a powerful means for meeting the challenges of access, quality and costs in fulfilling the educational needs of the society. However, there is a continuous need to evaluate distance education programmes. Quimbo (2002) pointed out that using the feedback of the CIPP model significantly improves the quality of the programme. Rekkedal (1998) argued that programme evaluation is considered an essential tool in ODL systems to assess the quality and enhance the effectiveness of the teaching and learning process. He further envisaged many reasons to support the need for programme evaluation. Other measures to control and improve quality have been so necessary and have been taken seriously by distance education institutions. In addition, Calder (1994) and Thorpe (1993) also highlighted the importance and positive aspects of the programme/course evaluation in the ODL system. Sangai *et al.* (2009) conducted an evaluative study of the IGNOU BED programme using the CIPP model. They found it a well-designed programme with the availability of high-quality self-learning material. However, the authors further argued that students and learners' lack problem-solving and independent thinking process. In addition, the use of technology was

minimal, and despite that, the learner’s success rate was more than 90%. The study also highlighted the importance of programme evaluation for further improvement in the teaching-learning process.

Similarly, Dimri and Panwar (2018) evaluated the MAPC programme offered by IGNOU, collecting feedback on various aspects of programme development and delivery from the learners in the Chandigarh region. The authors’ considered thirteen variables: content, language, receipt of SLM satisfaction level with counselling, evaluation of assignment, support for internship, practicum, and student support services. The mean score calculated for each variable, and it was highest for the SLM, support services and counselling and language of SLM. However, the study pointed out the scope for significant improvement in completion of internship and practicum in time; thus, some learners left with no choice but to take re-admission. The study also highlighted that corrective measures required on the number of attributes to ensure timely completion of the programme by the learners so that their satisfaction level is enhanced.

Structure of DDT Programme

The DDT programme is practical intensive, and it has eight courses, and each course consists of two credit of theory and two practical components. There is the provision of conducting 25 counselling sessions of two hours each for theory courses and 80 practical counselling sessions of four hours each. Thus, 370 hours of counselling sessions organised for the learners during this programme. The programme structure of the DDT programme presented in table 1.

Table 1: Structure of DDT Programme

Course Code	Title of the Course	Credits		
		Theory	Practical	Total
BPVI-11	Milk Production and Quality of Milk	2	2	4
BPVI-12	Dairy Equipment and Utilities	2	2	4
BPVI-13	Milk Processing and Packaging	2	2	4
BPVI-14	Dairy Products - I (Cream, Butter, Ghee, Butter-oil and Fat-rich Products)	2	2	4
BPVI-15	Dairy Products - II (Heat Desiccated Products, Paneer and Chhena, Concentrated Milk, Dried Milk)	2	2	4
BPVI-16	Dairy Products – III(Fermented Products, Cheese, Frozen Dairy Products, By-Products)	2	2	4
BPVI-17	Quality Assurance	2	2	4
BPVI-18	Dairy Management and Entrepreneurship	2	2	4
Total Credits		16	16	32

Source: Programme Guide of DDT Programme.

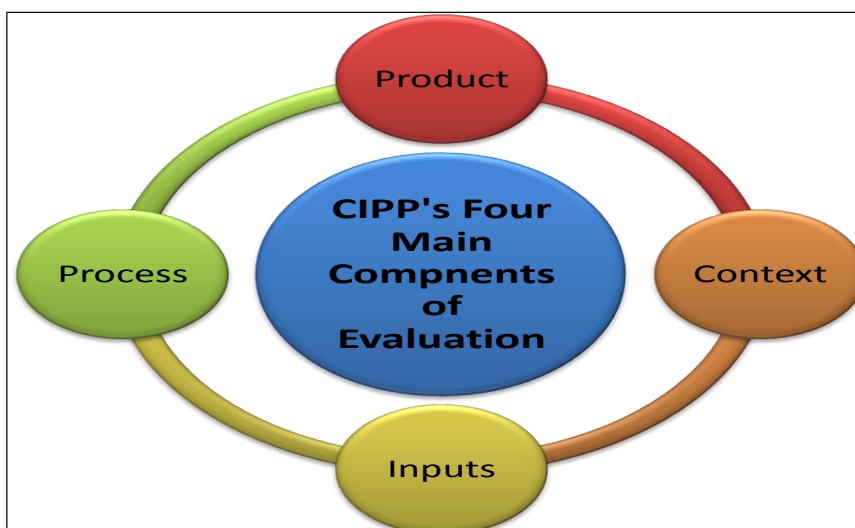
CIPP Evaluation Model

Stufflebeam (2002) developed the CIPP evaluation model, a comprehensive framework for guiding the evaluation of programmes, projects, personnel, products, institutions, and systems. CIPP has four core aspects: Context, Input, Process, and Product (Table 2 and Fig. 1). The CIPP evaluation model also applied to evaluate the academic programmes offered through open and distance learning.

Table 2: CIPP’s Programme Evaluation Process

CONTEXT	To assess needs & opportunities & help define & assess goals
INPUT	To assess alternative approaches & budgets & help guide & assess planning
PROCESS	To assess implementation & help guide efforts & interpret outcomes
PRODUCT	To assess outcomes & help promote & document success

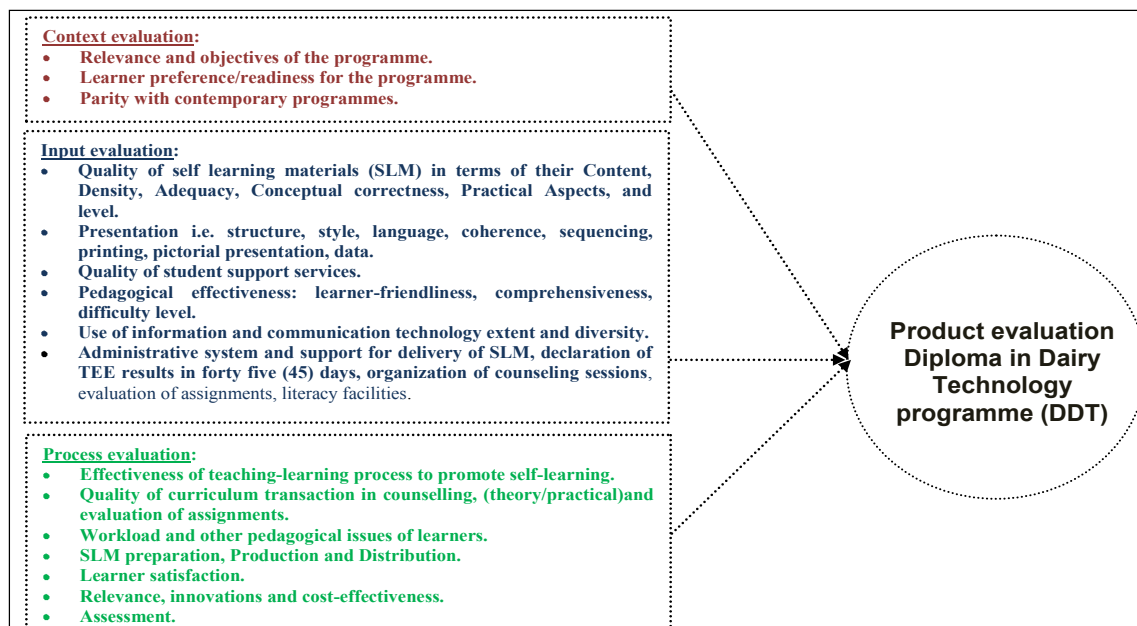
Accordingly, we have developed the conceptual framework for assessing the DDT programme and presented it in Fig. 1 and 2. Under context, an attempt made to determine the quality of SLM, delivery of counselling sessions and evaluation of assignments in the learners’ opinion. Thus, effectiveness in the teaching-learning process to promote self-learning, quality of curriculum transaction in counselling, evaluation of assignments, SLM preparation, production and distribution of SLM, learner satisfaction and relevance, innovations, and cost-effectiveness includes in the process.



Source: Developed by Authors based on CIPP Model.

Fig. 1: Main Components of CIPP Evaluation

The adopted approaches such as availability of SLM, students support services, pedagogical effectiveness, use of information and communication technology, and budgets comprise the inputs for the programme. Moreover, it helps to assess implementation and interprets the expected output in developing required skills and entrepreneurship quality for self-employment. The final output of the programme is the award of the certificate on successful completion of the programme. Finally, evaluating the programme to assess its success and failure is the ultimate product and outcome that provides an opportunity for making the corrective measures. Therefore, we analysed learners' and ACs feedback in the succeeding sections in the DDT programme evaluation process.



Source: Developed by the Authors.

Fig. 2: Conceptual Framework for Evaluation of Diploma in Dairy Technology (DDT)

Objectives of Study:

The main objective of the present study is to evaluate the DDT programme offered by IGNOU using the CIPP model. The study also has the following objectives:

- ❖ to examine the effectiveness of self-learning material provided to the learners;
- ❖ to assess the effectiveness of counselling sessions organised at different LSCs;
- ❖ to study the impact of assignments on the overall success of learners;

- ❖ to examine the examination system of IGNOU; and
- ❖ to discuss the views of Academic Counsellors on the various aspects of the DDT programme.

Methodology of Study

A well-structured questionnaire prepared in Google, and the link of the same sent to DDT learners enrolled under Regional Centre Lucknow and Aligarh from 2007 to 2015 through emails and SMSs. The maximum duration for completing the DDT programme is four years; therefore, the learners enrolled in 2015 would complete the programme in 2019 if they take the maximum period. As a result, the learners enrolled up to 2015 included in the sample of the study. Thus, the questionnaire sent to 337 learners to seek learners' opinions on a wide range of issues. One hundred five (105) learners responded to the questionnaire, which is 31.16% of total learners enrolled in the programme between 2007-15 at RC Lucknow and Aligarh. The discussion also took place with the Academic Counsellors (ACs), and the issues thus emerged are included in the study appropriately.

The questionnaires contained questions of the general profiles of the learners as well as on the academic issues. Therefore, the study aimed to collect information on the social status, background, employment status, medium of instruction, gender, media used for communication and employment status. In addition, the purpose of gathering information on the profile of the learners was to understand the socio-physical status of the learners. The second part of the questionnaire contained questions on learners' opinions on the DDT programme's objective. It also had questions about learners' views on self-learning material, the conduct of counselling sessions, evaluation of assignments, term-end examinations, and the learners' final performance about student support services and learners' commitments to complete the programme. In addition, while analysing the learner's opinion on the quality of self-learning material, the issues about content, density, style, language, practical aspects, adequacy and structure of SLM also considered. The information, thus collected presented in the form of cross tables.

An attempt also made to assess the study's objective on the five-point Likert scale, obtaining a mean score for each of them. While calculating the mean score, the number of responses received for a particular attribute divided by the Likert scale value for that attribute. For instance, under a specific objective opinion of the learners were obtained on a five-point scale, including strongly agree, agree, undecided, disagree, and strongly disagree, with the respective score of 5,4,3,2 and 1. For example, if the number of responses obtained under strongly agree is 62, the total score will be $62 \times 5 = 320$. Thus, the mean opinion score will be $(62 \times 5 + 28 \times 4 + 4 \times 3 + 9 \times 2 + 2 \times 1) / 105 = 4.32$.

Profile of the Learners

While analysing the profile of the learners, it revealed that the majority of the learners (56.68%) represents a general category. The proportion of OBC learners was 22.85% and SC 4.75%. However, there was a significant proportion of learners from OBC categories. Furthermore, it is interesting to note that most of the learners (67.56%) were from rural background. A substantial proportion of learners from rural areas also supports the study’s objective as it emphasises enrolling the rural masses to develop their capacity and inculcate awareness about the programme. Furthermore, most of the learners (89.32%) who joined the programme reported as unemployed, which indicates that the learners join the programme to enhance their entrepreneurship skills (Table 3).

Similarly, 91.91% of learners were male, which indicates that this programme is top-rated among the male population compared to females. On the other hand, 61.13% of learners who joined the programme were unmarried, indicating that the young generation has a higher preference for the programme. Interestingly, 78.64% of learners have mobile access, and 71.81% of them use email for communication, 70.33% of learners have opted for the Hindi medium compared to 29.67% English medium.

Table 3: General Profile of Learners

Main Parameter	Sub Parameter	No of Learners	Percentage
Social Status	General	191	56.68
	SC	16	4.75
	ST	00	0
	OBC	77	22.85
	Total	337	100
Territory Status	Rural	258	76.56
	Urban	79	23.44
	Total	337	100
Employment Status	Employed	36	10.68
	Unemployed	301	89.32
	Total	337	100
Medium	English	100	29.67
	Hindi	237	70.33
	Total	337	100
Gender	Male	333	98.91
	Female	04	1.19
	Total	337	100

Marital Status	Married	131	38.87
	Un-married	206	61.13
	Total	337	100
Mobile Nos.	Provided	265	78.64
	Not Provided	72	21.36
	Total	337	100
E-mail	Provided	242	71.81
	Not Provided	95	28.19
	Total	337	100

Results and Interpretation

The learners' opinion sought on a five-point Likert scale with its parameters of strongly agree, agree, undecided, disagree and strongly disagree, having weightage of 5, 4, 3, 2 and 1 (Table 4). The purpose was to understand whether learners expectation met concerning programmes' objective. Therefore, 86% of learners believe that the DDT programme has helped develop technical-level human resources for the dairy industry. Only 10% of learners have shown disagreement; however, 4% of learners were undecided.

Table 4: Learners Perception on the Objectives of DDT Programme

Objectives of the Study	Learners Views					Total	Mean Opinion Score
	Strongly Agree (05)	Agree (04)	Undecided (03)	Disagree (02)	Strongly Disagree (01)		
Develop technician level human resource for dairy industry.	62 (59.05)	28 (26.67)	04 (3.81)	09 (8.57)	02 (1.90)	105 (100)	4.32
Upgrade the technical proficiency of existing and lower-level workers	54 (51.43)	32 (30.48)	05 (4.76)	10 (9.52)	04 (3.81)	105 (100)	4.16
Develop young entrepreneurs for self-employment.	28 (26.67)	72 (68.57)	02 (1.90)	02 (1.90)	01 (.96)	105 (100)	4.18
Impart knowledge and technical proficiency in managing various activities	68 (64.76)	27 (25.71)	03 (2.86)	07 (6.67)	00	105 (100)	4.49
Overall Mean Opinion Score = (4.32 + 4.16 + 4.18 + 4.49)/4 = 4.29							

* Figures in parenthesis indicate percentage.

A significantly higher proportion of learners (82%) believe that the DDT programme has upgraded the existing technical proficiency. Therefore, lower-level workers/technicians

working in the dairy and allied sectors are satisfied with the programme structure. On the other hand, the proportion of learners who have shown disagreement was insignificant (13%). Furthermore, more than 95% of learners opined that the DDT programme had developed young entrepreneurs for self-employment in dairy technology and associated activities. Similarly, 95% of learners felt that pursuance of the DDT programme had imparted knowledge and technical proficiency in milk production, handling, processing, manufacturing of indigenous dairy products, and their marketing. Thus, 26.6% of learners strongly agree, and 68.57% agreed. Similarly, 64.76% gained skills to powerfully communicate knowledge and technical proficiency in managing various activities related to dairy technology, followed by 25.71% agreed. On the other hand, 8-10% of learners recorded negative or neutral opinion on the DDT programme's different objectives and provided feedback for the teachers and academics associated with the development and implementation of the programme to improve the quality of programme delivery further.

The learners' response to various objectives of the DDT programme was almost the same irrespective of gender, background and employment status. Thus, we may argue that the DDT programme has achieved its goals. The mean opinion score regarding the objective of the DDT programme varies from 4.16 to 4.49 for different objectives. The overall mean opinion score was 4.29, which falls in the category of agree. It shows that the learners believe that they have significantly benefitted by pursuing the DDT programme. Thus, the success score of the DDT programme in meeting its objectives is relatively high talks about the quality of the programme and its practical utility to the prospective learners.

(A) Availability of Self-learning Material

Self-learning material is one of the essential components of the instructional system in open and distance learning. Therefore, it is crucial to judge SLM's quality by considering its various aspects. As a result, learners' feedback on its different aspects such as content, density, style, language, practical aspect, adequacy and structure to understand its suitability (Table 5 and Fig. 3). Accordingly, the input of the learners obtained on these aspects has been analysed and presented below.

Table 5 reveals that 59% of learners have rated the content of SLM as excellent, followed by 31% very good, 9% good, and 1% average. It shows that more than 99% of learners opined that SLM content supplied to them by IGNOU falls in the category of good to excellent. Undoubtedly, the learners rated IGNOU SLM highly, substantiated in our previous study where learners use e-content to prepare and submit assignments during lockdown (Dimri, 2020). On the other hand, 51% of learners have placed the density of SLM as excellent, 40% very good, and 6% good. Only 2% of learners have rated the density of SLM as average and 1% poor. It shows that more than 97% of learners believed that the density of SLM is good

and above on a five-point scale. Similarly, 16% of learners have mentioned that style of writing SLM is excellent, 57% very good, 22% good and 5% average. None of the learners has rated the style of writing and presentation of SLM poor. It reflects that more than 95% of learners are satisfied with the style of writing SLM.

While analysing the learner's opinion on the language of the SLM, only 5% of learners have indicated language of SLM as excellent, 21% very good, 50% good, 13% average and 11% poor. Thus, it reflects that more than 76% of learners have indicated language of SLM ranging from good to excellent. However, the proportion of learners' rating language as excellent is only 5%, which is significantly less than the rating content (59%), density (51%), and style (16%). Thus, it shows that a significant proportion of learners were not satisfied with the language used in SLM. On the other hand, about 17% of learners have rated practical aspects of SLM as excellent, followed by 57% very good and 11% good 13% average. Therefore, it indicates that more than 85% of learners appear satisfied with the practical aspects of SLM.

Table 5: Learners Opinion on Various Aspects of Self-learning Material

Aspects	Learners Views					Total	Mean Opinion Score
	Excellent (05)	Very Good (04)	Good (03)	Average (02)	Poor (01)		
Content	62 (59.05)	33 (31.43)	09 (8.57)	01 (.95)	0	105 (100)	4.49
Density	54 (51.43)	42 (40)	06 (5.72)	02 (1.90)	01 (.95)	105 (100)	4.39
Style	17 (16.19)	60 (57.14)	23 (21.91)	05 (4.76)	0	105 (100)	3.85
Language	05 (4.76)	22 (20.95)	53 (50.48)	14 (13.33)	11 (10.48)	105 (100)	2.96
Practical Aspects	18 (17.15)	60 (57.14)	12 (11.43)	14 (13.33)	01 (.95)	105 (100)	3.76
Adequacy	44 (41.91)	38 (36.19)	18 (17.14)	05 (4.76)	0	105 (100)	4.15
Structure	71 (67.62)	19 (18.10)	10 (9.52)	05 (4.76)	0	105 (100)	4.49
Overall Mean Opinion Score = (4.49 + 4.39 + 3.85 + 2.96 + 3.76 + 4.15 + 4.49) / 7 = 4.01							

*Figures in parenthesis indicate percentage.

While analysing the learners' opinion on the adequacy of SLM, 41.91% of learners indicated that SLM excellent and 36.19% very good, 17.14% good followed by 4.76% as average. Thus, more than 95% of learners opined that the SLM of the DDT programme is adequate. On the other hand, 67.62% of learners have indicated that the structure of SLM excellent, 18.10% very good, 9.52% good 4.76% average. Therefore, it is clear from the above analysis that more than 96% of learners are satisfied with the structure of SLM.

However, the mean opinion score on various aspects of SLM varies from 2.96 to 4.49, with an overall mean opinion score of 4.01. All these mean opinion scores except language fall in the

range of 3.50 to 4.49, indicating that learners have rated the content, density, style, practical aspects, adequacy, and structure of SLM very good. The mean opinion score of language is 2.96, which falls between 2.50 to 3.49, indicating that learners have rated SLM as good. Further analysis of the SLM reveals that about 77% from rural background have found the language of SLM relatively difficult, resulting in a lower rating. Thus, in the learner’s opinion, SLM is quite good at meeting the objectives of the DDT programme and opined that the SLM of the DDT programme is quite relevant and meets the present day requirement.

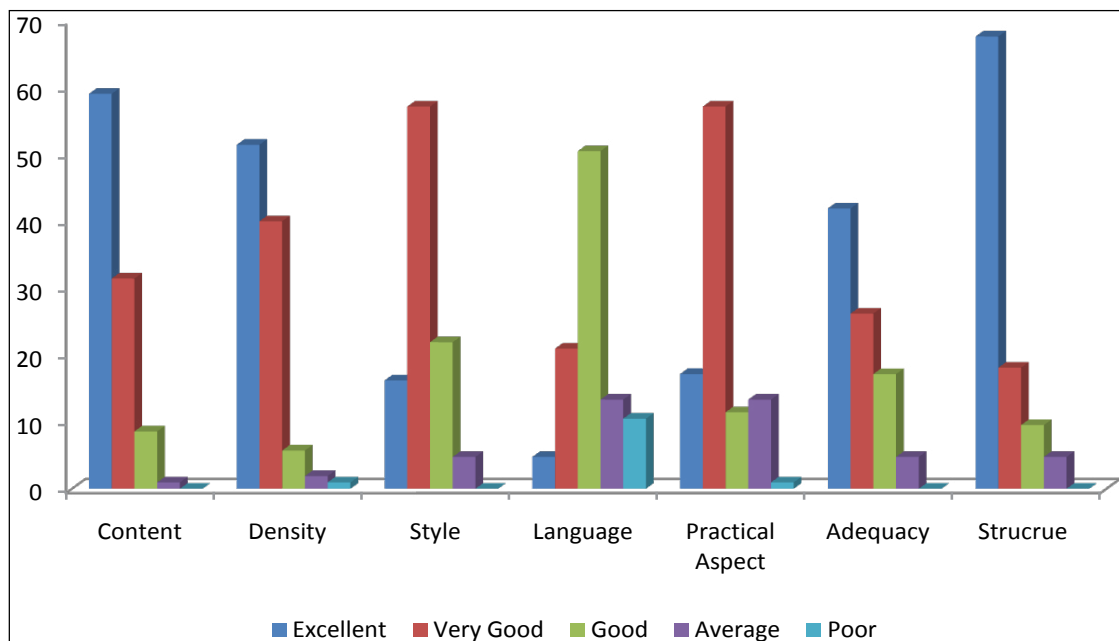


Fig. 3: Learners Perception on Quality of SLM

(B) Organising Counselling Sessions

Counselling sessions for theory/practical courses organised at IGNOU Study/Programme Study centres. The counselling sessions are necessary to resolve learners’ problems as well as to provide them practical exposure. In IGNOU theory, counselling sessions are not compulsory, but attending practical counselling sessions is mandatory. Moreover, the learners have to maintain 75% attendance in practical counselling sessions as it is a minimum requirement to appear in the term-end practical examination. Several factors are associated with the attendance of learners in the counselling sessions, such as receipt of SLM before the commencement of counselling sessions, timely receipt of counselling schedule, the effectiveness of Academic Counsellors (ACs) in delivery of counselling sessions etc. (Table 6).

Interestingly, 97.14% of learners reported that they received SLM before the start of counselling sessions. Only less than 3% do not agree on receipt of SLM before the commencement of the session. However, the university makes efforts to provide SLM before the commencement of the academic session in the induction meeting. On the other hand, approximately 75% of learners agreed that counselling sessions were scheduled as per their requirement/convenience, whereas 19% did not agree with this. On the other hand, 15.24% of learners disagree, 3.84% strongly disagree, and 5.71% undecided that the counselling sessions scheduled as per requirement. Thus, one-fourth of the respondents were not satisfied with the scheduling of counselling sessions.

Table 6: Learners Perception on Organization of Counseling Sessions (Theory/Practical)

Parameter	Learners Views					Total	Mean Opinion Score
	Strongly Agree (05)	Agree (04)	Undecided (03)	Disagree (02)	Strongly Disagree (01)		
Self-learning Material received before start of counselling Sessions	85 (80.95)	17 (16.19)	0 (0.00)	02 (1.91)	01 (.95)	105 (100)	4.74
Counselling sessions scheduled as per the learners requirement/convenience	40 (38.10)	39 (37.14)	06 (5.71)	16 (15.24)	04 (3.81)	105 (100)	3.90
Counselling sessions organised as per norms, sufficient for completion of DDT programme in minimum duration.	25 (23.81)	51 (48.57)	04 (3.81)	19 (18.10)	06 (5.71)	105 (100)	3.67
The counselling sessions organized effective	69 (65.72)	25 (23.81)	04 (3.81)	06 (5.71)	01 (.95)	105 (100)	4.48
Adequacy of ACs knowledge.	62 (59.05)	28 (26.67)	05 (4.76)	07 (6.66)	03 (2.86)	105 (100)	4.32
overall presentation of ACs	42 (40.00)	43 (40.95)	06 (5.71)	10 (9.53)	04 (3.81)	105 (100)	4.04
Overall mean opinion score = (4.74 + 3.90 + 3.67 + 4.48 + 4.32 + 4.04)/6 = 4.19							

**Figures in parenthesis indicate percentage.*

A significant proportion of learners (72%) opined that the counselling sessions organised as per norms of IGNOU and are sufficient for completing the DDT programme within the minimum duration. In contrast, 24% of learners disagree on this issue. Thus, it shows that more than two-thirds of learner are satisfied with the number of counselling sessions organised. However, it is equally important to understand the opinion of one-fourth of learners who reported that counsellings sessions were not as per the norms of the university. Similarly, 90%of learners agreed that counselling sessions were effective, encouraging, communicative, and motivating.

On the other hand, 7% of learners (5.71% disagree and 0.95% strongly disagree) expressed that the counselling sessions were ineffective for encouraging communication and motivating them. It is a significant proportion of learners and warrants the RC functionaries' attention to understand further the learners' dissatisfaction, and 3% of learners were undecided. Thus, effective organisation of counselling sessions had a positive impact on the overall success of the learners.

On the other hand, approximately 86% (59.05 % strongly agreed, 26.67% agreed) of learners believed that academic counsellors' knowledge was adequate, whereas 9% of learners reported it inadequate. Therefore, academic counsellors having a good understanding of the subject matter will systematically resolve the learners' problems. Similarly, about 81% of learners reported that presentation in counselling sessions was enriching, whereas 13% of learners were dissatisfied with the academic counsellors' exhibition, and 6% were undecided.

In ODL, the role of the ACs is significant to sustain the interest of the learners. Thus, effective counselling sessions enhance the performance of the learners and their interest in counselling sessions. It is evident to note that the mean opinion score on various attributes of counselling sessions varies from 3.67 to 4.74 with an overall mean opinion score of 4.19, which falls in the range of 3.50 to 4.49 (except mean score of 4.74), which indicates that almost all the learners agree to the various parameters of organising counselling sessions. Thus from the learners' point of view organisation of counselling sessions were very helpful in meeting the objectives of the DDT programme.

(C) Assignment evaluation

The assignment is an essential teaching-learning tool in ODL as it forms 25-30% weightage in the learners' overall performance. Therefore, this study had several questions about assignments to understand the learner's opinion on various aspects of assignments (Table 7).

While analysing the learner's perception regarding the inclusion of assignment questions from across the blocks of SLM, 93% of learners agree that assignment questions cover all the blocks of SLM, and only 3% of learners disagreed on this issue, and 4% of learners were undecided. Among these learners, 59.55% learners strongly agree, and 34.29% agree. Similarly, 83% of learners believe that academic counsellors had explained the procedure of preparing assignments during counselling sessions. However, 14% of learners did not agree with this, and this is important feedback and warrants attention for strengthening the monitoring of academic counselling. It shows the counselling sessions are essential and helpful in the preparation of assignments.

On the other hand, 78% of learners agree that tutor comments written on evaluated assignments reflect learners' performance, which helped the learners further improve the quality of the assignment. In addition, the feedback on assignments further correlates with the marks/

grades obtained in the assignments. At the same time, 17% provided negative feedback, with 13.33% disagree and 3.81 strongly disagree. On the other hand, 5% of learners were neutral. However, approximately one-fifth of the learners' feedback not supported the AC as far as comment on the assignments is concerned.

Table 7: Learners Opinion on Various Aspects of Assignments

Parameter	Learners Views					Total	Mean Opinion Score
	Strongly Agree (05)	Agree (04)	Undecided (03)	Disagree (02)	Strongly Disagree (01)		
Assignment questions cover all the blocks of SLM	62 (59.05)	36 (34.29)	04 (3.81)	02 (1.90)	01 (.95)	105 (100)	4.49
ACs explained the procedure of preparing assignments in the counselling sessions.	55 (52.38)	32 (30.47)	03 (2.86)	12 (11.43)	03 (2.86)	105 (100)	4.18
Tutor comments written on evaluated assignments	30 (28.57)	52 (49.53)	05 (4.76)	14 (13.33)	04 (3.81)	105 (100)	3.86
Preparation of assignments actually helped in securing good marks/grades in TEE.	70 (66.67)	24 (22.86)	02 (1.90)	08 (7.62)	01 (.95)	105 (100)	4.47
Opinion on assignment is one of the most important teaching-learning tools in ODL	56 (53.33)	34 (32.38)	04 (3.81)	07 (6.67)	04 (3.81)	105 (100)	4.25
Overall mean opinion score = (4.49 + 4.18 + 3.86 + 4.47 + 4.25)/5 = 4.25							

*Figures in parenthesis indicate percentage.

The preparation and timely submission also help the learners in the term-end examination. Approximately 90% of learners agree that the preparation of assignments had helped them secure good marks/grades in the final term-end examination. It includes the strongly agree opinion of 66.67% of learners and 22.86% agreed. However, contrary to this, 8% of learners provided negative feedback, and 2% of responses remained undecided.

Learners' opinion on whether they consider assignments as an essential teaching-learning tool and 86% of learners opined that an assignment important teaching-learning tool in ODL with 53.33% strongly agreed and 32.38% agree. However, 10% of learners disagree, with 6.67 strongly disagree and 3.81% disagree; on the other hand, 4% of learners remained undecided. The mean opinion score on various attributes of assignments varies from 3.86 to 4.49, with an overall mean opinion score of 4.25. It indicates that the learners agreed to various support

services provided regarding the assignment's preparation and evaluation. Furthermore, it shows that assignments positively impact completing the DDT programme successfully as it provides two-way communication between learners and academic counsellors. However, we should not forget the approximately 15% of learners were not satisfied with one or the other component of assignment-related issues. It is a significant number of learners and warrants the attention of RC functionaries to strengthen the monitoring.

Term End Examination

The apparent objective of pursuing the DDT programme is to get a recognised diploma in Dairy technology. However, the certificate is awarded only after completing all courses listed in Table 1 by appearing in the Term End Examination (TEE), submitting the assignments, and completing both theory and practical components. Therefore, the learners' feedback also took on several issues that influence their performance in the examination (Table 8). Roughly 90% of learners agree that question papers of TEE cover all the blocks of SLM, with 56.19% strongly agreed and 34.29% agree. At the same time, 5% of learners have an opposite opinion, with 2.86% disagree and 1.90% strongly disagree. On the other hand, 5% of learners who remained undecided also warrants attention. It reflects the importance of studying the entire SLM, and selective study will not fetch the desired result in the term-end examination.

An attempt also made to gauge the learners' perception regarding the time allotted for completing a question as it is directly related to the learners' performance. It is evident to note from Table 8 that more than 89% of learners believed that the time allotted for answering the questions was sufficient, with 48.47% strongly agree, and 39.05% agree. Therefore, it seems that 11% of learners were not satisfied with the time allotted for attempting the question paper. On the other hand, the response of more than 8% of learners was negative, and 4% of learners remained undecided. However, this shows that most of the learners were satisfied with the time allotted for TEE.

The attempt to seek learners' perception on grading and marking pattern revealed 77% of learners believe that the marking/grading pattern of answer scripts was upto their expectation, with 40% highly agreed and 37.14% agreed. On the other hand, 5% of learners remained undecided on this issue. Thus, it shows that more than two-thirds of learners were satisfied with the evaluation of answer scripts and marks received.

A significant proportion of learners (89%) agreed that the overall examination of IGNOU establishes a high standard and transparency, whereas 7% of learners disagree and 4% of learners remained undecided. It shows that IGNOU's examination system sets a high standard and transparency.

Table 8: Learners Views on Term End Examination

Parameter	Learners Views					Total	Mean Opinion Score
	Strongly Agree (05)	Agree (04)	Undecided (03)	Disagree (02)	Strongly Disagree (01)		
TEE questions cover all the blocks of SLM	59 (56.19)	36 (34.29)	05 (4.76)	03 (2.86)	02 (1.90)	105 (100)	4.40
Sufficient time allotted for answering the questions	51 (48.57)	41 (39.05)	04 (3.81)	06 (5.71)	03 (2.86)	105 (100)	4.25
Marking/grading pattern upto the expectation	42 (40.00)	39 (37.14)	05 (4.76)	16 (15.24)	03 (2.86)	105 (100)	3.96
High standard and transparency maintained	70 (66.67)	24 (22.86)	04 (3.81)	05 (4.76)	02 (1.90)	105 (100)	4.48
Strong provision of reporting UFM	90 (85.71)	14 (13.33)	0 (00.00)	01 (0.95)	00 (00.00)	105 (100)	4.84
Overall mean opinion score = (4.40 + 4.25 + 3.96 + 4.48 + 4.84) / 5 = 4.39							

*Figures in parenthesis indicate percentage.

On the other hand, most learners (99%) believe that any unfair-means (UFM) not permitted in IGNOU further establishes IGNOU credibility and sanctity internationally. The mean opinion score on various aspects of the examination ranges from 3.96 and 4.84, with an overall mean opinion score of 4.39. This show that all the learners agree that IGNOU's examination system sets a high standard.

(e) Learners Performance

The year-wise number of learners enrolled and completed the programme successfully presented in Table 9 and Fig. 4. The analysis of the table reveals that only 41.24% of learners achieved the DDT programme successfully, which is relatively a good pass percentage compared to other diploma programmes of the university. It also reveals that 30.27% of learners had submitted some assignments and appeared in the Term End Examination of few courses but could not complete all the courses. More than 28%of learners had not done any activity to meet the DDT programme completion requirement as these learners had not submitted even a single assignment for any of the DDT course. The average pass percentage is more than 40%, indicating that the learners taking admission in the DDT programme are motivated and hardworking. However, efforts required to improve the pass percentage. The analysis provides essential feedback, and it is desirable to motivate the learners to complete the programme in stipulated time. It is also important to note that there has been wide variation in the pass percentage across the years. It ranged from 24.24 % in 2007 to 52.50 % in 2012.

Table 9: Performance of Learners

Year	Learner Enrolled	Learners Completed some activities	Learners not Completing the programme	Learners Completed the Programme
2007	33	15 (45.46)	10 (30.30)	08 (24.24)
2008	26	09 (34.62%)	10 (38.46)	07 (26.92)
2009	17	03 (17.65)	08 (47.06)	06 (35.29)
2010	29	08 (27.59)	12 (41.38)	09 (31.03)
2011	50	09 (18.00)	15 (30.00)	26 (52.00)
2012	40	16 (40.00)	03 (7.50)	21 (52.50)
2013	44	11 (25.00)	10 (22.73)	23 (52.27)
2014	37	10 (27.03)	10 (27.03)	17 (45.94)
2015	61	15 (24.59)	24 (39.34)	22 (36.07%)
Total	337	96 (28.49%)	102 (30.27%)	139 (41.24%)

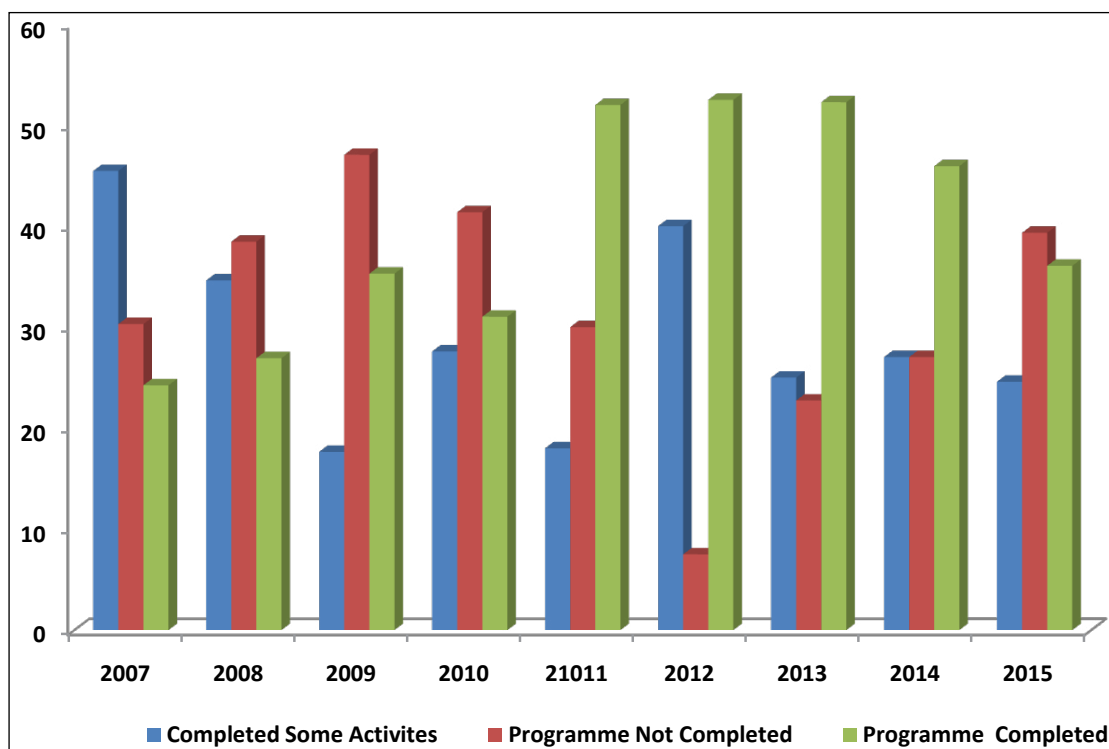


Fig. 4: Year- wise Performance of the Learners

Opinion of Academic Counsellors on Various Aspects of DDT programme

A visit made to the programme to DDT programme discussed in detail to take the academic counsellors' feedback. The discussion was highly fruitful, and the following points emerged during the deliberation:

- ❖ The objectives of launching the DDT programme have met to a large extent.
- ❖ The overall quality of SLM is outstanding. However, ACs reported that the language of SLM in a few blocks are slightly challenging and demanding. Therefore, it has to be made learners friendly and easy to grasp.
- ❖ The number of counselling sessions enhanced by 50%. Although remuneration rates are meagre, it needs revision considering the overall background of the academic counsellors.
- ❖ The assignments are beneficial in the ODL system. The performance of learners attempting assignment questions found better as compared to other learners.
- ❖ The requirement of improvement in the learner's performance felt by the ACs, and by improving the performance, the required skill will also increase.
- ❖ All the academic counsellors have mentioned that IGNOU conducts its examination without permitting any unfair-means to maintain a high standard.

FINDINGS AND SUGGESTIONS

The study primarily analysed the perceptions of the learners enrolled in the DDT programme, and the findings and suggestions reflect the interpretation of the data thus analysed. The findings and suggestions of the study are presented below:

- ❖ The respondents represent a cross-section of background and social status; however, most of them hail from rural areas (76.56%) and the general category (56.68%).
- ❖ The male learners (98.91%) predominantly pursued the DDT programme and drew programme implementers' attention to popularise the programme among females.
- ❖ A significant proportion of learners reported unemployed (89.32%) and pursued the programme to develop entrepreneurship skills
- ❖ The majority of the learners have accessibility to the mobile phone (78.64%) and emails (71.81%)
- ❖ Relatively high mean opinion score regarding the objective of the DDT programme (4.16 to 4.49) substantiate that the programme objective addressed effectively and met the learners' expectation to a great extent resulting in the up-gradation of learners skills.
- ❖ The mean opinion scores of different aspects of SLM range from 3.50 to 4.49, highly substantiating the quality of SLM content, its density, presentation style, practical aspects, adequacy for the learners and structure.

- ❖ However, the relatively low mean opinion score of language (2.96) falls between 2.50 to 3.49, indicating that learner's friendly language required understanding the SLM and making it more popular among the learners. This feedback is essential and draws the attention of those engaged in programme development.
- ❖ The learners' satisfaction level concerning the conduct of counselling session and input provided by AC and their interaction rated significantly higher, ranging from 3.67 to 4.74, with an overall mean opinion score of 4.19. However, there are several pitfalls, including time suitability, attendance in counselling and requirement of more than prescribed counselling session and these issues need to be addressed effectively.
- ❖ The mean opinion score on various aspects of the examination ranges from 3.96 and 4.84, with an overall mean opinion score of 4.39. This show that all the learners agree that IGNOU's examination system establishes high standard and sanctity
- ❖ The mean opinion score on various attributes of assignments varies from 3.86 to 4.49, with an overall mean opinion score of 4.25. It indicates that the learners agreed to different aspects of support services concerning the assignment's preparation and evaluation.
- ❖ The pass percentage is more than 40%, indicating that the learners taking admission in the DDT programme are motivated and hardworking.

CONCLUSION

The DDT programme has achieved its laid down objectives very effectively. The overall mean opinion score of learners measured in quantitative terms worked out to be 4.29 on the Likert five-point scale. Thus the success score of the DDT programme is very high, and most of the learners benefitted by pursuing this programme. The learner's response on various aspects of SLM, i.e., content, density, style, language, practical aspects, adequacy and structure, is very good, reflecting that they were satisfied with the overall quality of the SLM. Most of the learners agree that counselling sessions organised both theory and practical were very useful for them.

The learners opined that the preparation of assignments helped them appear in the term-end examination because the pattern of questions was the same. Almost all the learners agreed that the examination activities of IGNOU establish a very high standard. Any unfair-means strongly discouraged in the examination. The learners believe in getting good jobs on completion of the DDT programme. The learners' responses were the same irrespective of gender, background, and social and employment status. The pass percentage in the DDT programme is more than 40% which is very encouraging for prospective learners. The academic counsellors associated with the DDT programme were also satisfied with the overall delivery mechanism of IGNOU. However, the academic counsellors have recommended revising the DDT programme on priority by including the inclusion of the latest development in dairy technology.

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