Information needs and sources of information accessed by the farmers for problem-solving in agriculture in Andhra Pradesh

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Abstract
Online and digital learning is the process of acquiring new understanding, knowledge, behaviour and skills by the use of internet enabled electronic devices. Learning behaviour included activities enabling respondents to access online and digital content and interact with others productively in the community. The study was conducted in Andhra Pradesh during 2021-22 using exploratory research design. The respondents for the study included 50 farmers. The farmers who were using online and digital learning tools for problem solving in agriculture were selected using simple random sampling procedure. Farmers possessing smart phones and using them for at least a period of one year were sampled for the study. Data was collected using online questionnaire coupled with telephonic interview. Data was analyzed using descriptive statistics. The Online and digital learning behaviour of farmers was studied in terms of learning behaviour, frequency of using and time spent in browsing the internet for problem solving in agriculture. Nearly two third of the farmers had medium learning behaviour (64.00%), followed by low (20.00%) and high (16.00%) learning behaviour. The information accessed by the farmers and extensionists was about input sources & prices, new varietal information, new farm machinery, weather forecast, novel technologies, market price information, govt. schemes and subsidy information, crop choice, seed rate and seed treatment, new plant protection chemicals, weedicides, fertilizer application, pest management, disease management, pesticide application, physiological disorders, techniques of water saving, storage, post-harvest, dairy & poultry breeds, high yielding fodder varieties, crop diversification, organic farming, natural resource management, agroforestry, success stories, expert talks and interviews. The information sources of farmers included input dealers, state DOA, progressive farmers, friends/neighbours/relatives, TV, mobile apps, newspaper articles and ANGRAU Scientists. The information sources of extensionists included internet, colleagues, Vyavasaya panchangam, magazines (Vyavasayam, others), seminars or workshops or conferences, scientific journals, newspapers, research institutes, television and radio.

Keywords: Online learning, digital learning, information needs and information sources

1. Introduction
The value of information has increased significantly as the agricultural systems in developing countries become knowledge intensive. Access and use of current information is critical not only for financial success of farmers, but also to support sustainable agricultural systems. Information and Communications Technologies (ICTs) have facilitated learning and knowledge sharing, generated global information flows, empowered citizens and communities in ways that have redefined governance and have created significant wealth and economic growth resulting in a global information society. The new addition to the ICT world is the concept of online and digital learning. Agriculture is the backbone of Indian economy and farmer is the main player in it and extension personnel support farmers for technology backstopping. The national objective of the doubling of farmer’s income cannot be achieved without the successful delivery of information on latest technologies and modern practices. These days everybody are actively using mobiles to search agricultural information, related audio and video files. Even the extensionists are giving agro advisories to farmers via electronic platforms. Online and digital learning is the process of acquiring new understanding, knowledge, behaviour and skills by the use of internet enabled electronic devices. Learning behaviour is defined as learning activities that enable respondents to access online and digital content and interact with others productively in the community. A better understanding of farmers’ online and digital learning behaviour could help,
guide extension and other agricultural programs to better target specific groups of farmers.

Materials and Methods
The study was conducted in Andhra Pradesh during 2021-22 using exploratory research design. The entire state of Andhra Pradesh was purposively selected as the researcher hails from this state. The respondents for the study included 50 farmers. The farmers who were using online and digital learning tools for problem-solving in agriculture were selected using a simple random sampling procedure. Farmers possessing smartphones and using them for at least a period of one year were sampled for the study. Data was collected using an online questionnaire coupled with telephonic interview. Data was analyzed using descriptive statistics.

Results and Discussion
An attempt was made in the present investigation to understand the online and digital learning behavior of farmers. The Online and digital learning behaviour of farmers was studied in terms of learning behaviour, frequency of use and time spent in browsing the internet for problem solving in agriculture.

Information needs of farmers for problem solving in agriculture
The information needs of farmers for problem solving in agriculture was studied in terms of Information needs and search behaviour; and Sources of information accessed by the farmers.

Information needs and search behaviour of farmers
It refers to the information required by the respondents to solve problems related to farm. Information needs of farmers was assessed in 28 key areas on three-point continuum viz., high search, moderate search and low search. The data on information needs and search behaviour of farmers is presented in Table 1. and Figure 1.

Input sources & price
It is evident from Table 1. and Figure 1. that three fifth of the farmers were found in the category of high search (60.00%) of information on input sources & price, followed by moderate (30.00%) and low search (10.00%). The results are in conformity with that reported by Jyothi & Vijayabhinandana. (2024) [6].

New varietal information
Majority of the respondents were found in the high search (84.00%) category for new varietal information, followed by moderate (4.00%) and low search (10.00%).

New farm machinery
Fifty eight percent of the farmers were found in the category of high search of information on new farm machinery, followed by moderate (16.00%) and low search (26.00%).

Weather forecast
Great majority (90.00%) of the farmers were found in the category of high search of information on weather forecast, followed by moderate (8.00%) and low search (2.00%). The results are in conformity with that reported by Jyothi & Vijayabhinandana. (2024) [6].

Novel technologies
Majority of the respondents were found in the high search (82.00%) of novel technologies, followed by moderate (8.00%) and low search (10.00%).

Market price information
Majority (86.00%) of the farmers were found in the category of high search of information on market price information, followed by moderate (10.00%) and low search (4.00%). The results are in conformity with that reported by Venkata Subbaiah et al. (2020) [23].

Govt. schemes and subsidy information
Less than one fourth of the respondents were found in the high search (22.00%) of govt. schemes and subsidy information, followed by moderate (58.00%) and low search (20.00%).

Crop choice
Less than one third of the respondents were found in the high search (30.00%) of crop choice, followed by moderate search (44.00%) and low search (26.00%).

Seed rate and seed treatment
Majority (70.00%) of the farmers were found in the category of high search of information on seed treatment and seed rate, followed by moderate (16.00%) and low search (14.00%).

New plant protection chemicals
Majority (88.00%) of the farmers were found in the category of high search of information on new plant protection chemicals, followed by moderate search (12.00%). None of the respondents were found in low search category.

Weedicides
Majority (62.00%) of the farmers were found in the category of high search of information on seed treatment & rate, followed by moderate (26.00%) and low search (12.00%).

Fertilizer application
More than one third of the farmers were found in the category of high search (34.00%) of information on fertilizer application, followed by moderate (16.00%) and low search (50.00%).

Pest management
Nearly two-third (64.00%) of the respondents were found in the high search of pest management, followed by moderate (12.00%) and low search (24.00%).

Disease management
More than half of the respondents were found in the high search (52.00%) of disease management, followed by moderate (24.00%) and low search (24.00%).
Pesticide application
More than one fourth of the farmers were found in the category of high search (26.00%) of information on pesticide application, followed by moderate (18.00%) and low search (56.00%).

Physiological disorders
Forty two percent of the respondents were found in the high search of physiological disorders, followed by moderate (24.00%) and low search (34.00%).

Techniques of water saving
Less than one third of the respondents were found in the high search(30.00%) of information on techniques of water saving, followed by moderate (36.00%) and low search (34.00%).

Storage
Forty two percent of the farmers were found in the category of high search of information on storage, followed by moderate search (30.00%) and low search (28.00%).

Post-harvest
More than one third of the farmers were found in the category of high search (36.00%) of information on post-harvest, followed by moderate (10.00%) and low search (54.00%).

Dairy & poultry breeds
Forty four of the respondents were found in the high search of dairy & poultry breeds, followed by moderate (26.00%) and low search (40.00%).

High yielding fodder varieties
More than one third (of the farmers were found in the category of high search 36.00%) of information on high yielding fodder varieties, followed by moderate (18.00%) and low search (46.00%).

Crop diversification
Less than one third of the farmers were found in the category of high search (30.00%) of information on crop diversification, followed by moderate (16.00%) and low search (54.00%).

Organic farming
Less than one fourth of the farmers were found in the category of high search (24.00%) of information on organic farming, followed by moderate (22.00%) and low search (54.00%).

Natural resource management
Eighteen percent of the respondents were found in high search the of Natural resource management, followed by moderate (6.00%) and low search (76.00%).

Agroforestry
Ten percent of the respondents were found in high search of information on agroforestry, followed by moderate (14.00%) and low search (76.00%).

Success stories
Less than one third of the respondents were found in high search (30.00%) of information on success stories, followed by moderate (68.00%) and low search (2.00%).

Expert talks
Less than one fourth of the respondents were in high search (24.00%) of information on expert talks, followed by moderate (42.00%) and low search (34.00%).

Interviews
More than one fourth of the respondents were found in the high search (28.00%) of information on interviews, followed by moderate (12.00%) and low search (60.00%).

<table>
<thead>
<tr>
<th>S. No</th>
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<th>Low search</th>
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<td></td>
<td>F%</td>
<td>F%</td>
<td>F%</td>
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<td>43.00</td>
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<td>42.00</td>
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<td>12.00</td>
<td>4.00</td>
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<td>9.00</td>
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<td>25</td>
<td>Agroforestry</td>
<td>5.00</td>
<td>5.00</td>
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<td>Success stories</td>
<td>12.00</td>
<td>12.00</td>
<td>14.00</td>
</tr>
<tr>
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<td>Expert talks</td>
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<tr>
<td>28</td>
<td>Interviews</td>
<td>17.00</td>
<td>17.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>

*F= frequency *% = percentage
Success stories
Less than one fourth of the respondents were found in high search (22.00%) of information on success stories, followed by moderate (28.00%) and low search (50.00%).

Expert talks: Less than one third of the respondents were in high search (30.00%) of information on expert talks, followed by moderate (24.00%) and low search (46.00%).

Interviews
More than one third of the respondents were found in the high search (34.00%) of information on interviews, followed by moderate (10.00%) and low search (56.00%). Farmers accessed a variety of information related to agriculture to solve field related problems. The information accessed was about input sources & price, new varietal information, new farm machinery, weather forecast, novel technologies, market price information, government schemes and subsidy information, crop choice, seed rate and seed treatment, new plant protection chemicals, weedicides, fertilizer application, pest management, disease management, pest control, new fertilizer, new farm machinery, new varietal information, input sources & price.
Sources of information accessed by the farmers

It refers to the extent to which the farmer accessed various information sources for problem solving in agriculture. The information sources included input dealers, state DOA, progressive farmers, friends/neighbors, TV, mobile apps, newspaper articles and ANGRAU Scientists. It was measured on three-point continuum, viz: never, occasionally and frequently.

It is evident from Table 2 that 18.00 percent of the farmers accessed information from input dealers frequently, followed by occasionally (42.00%) and never (40.00%).

More than half of the farmers accessed information from state DOA frequently (54.00%), followed by occasionally (30.00%) and never (16.00%).

More than half of the farmers accessed information from friends/neighbors/relatives frequently, followed by occasionally (34.00%) and never (6.00%).

Majority (78.00%) of the farmers accessed information from friends/neighbors/relatives frequently and occasionally (22.00%).

Less than one third of the farmers accessed information from TV frequently (30.00%), followed by occasionally (54.00%) and never (16.00%).

More than half of the farmers accessed information from mobile apps frequently (52.00%), followed by occasionally (22.00%) and never (22.00%).

A meagre proportion of the farmers accessed information from newspaper articles frequently (12.00%), followed by occasionally (36.00%) and never (52.00%).

More than half of the farmers accessed information from ANGRAU Scientists frequently (54.00%), followed by occasionally (30.00%) and never (16.00%).

The results are in conformity with that reported by Jyothi (2006). Sixty percent of the farmers accessed information from progressive farmers frequently, followed by occasionally (30.00%) and never (16.00%).

More than half of the farmers accessed information from ANGRAU Scientists frequently (54.00%), followed by occasionally (30.00%) and never (16.00%).

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The results are in conformity with that reported by Jyothi (2006). Sixty percent of the farmers accessed information from progressive farmers frequently, followed by occasionally (30.00%) and never (16.00%).

Table 2: Distribution of farmers according to the sources of information accessed (n=50)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Source</th>
<th>Frequently</th>
<th>Occasionally</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
</tr>
<tr>
<td>1.</td>
<td>Input dealers</td>
<td>9</td>
<td>18.00</td>
<td>21</td>
</tr>
<tr>
<td>2.</td>
<td>State DOA</td>
<td>27</td>
<td>54.00</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>Progressive farmers</td>
<td>30</td>
<td>60.00</td>
<td>17</td>
</tr>
<tr>
<td>4.</td>
<td>Friends/neighbors/relatives</td>
<td>39</td>
<td>78.00</td>
<td>11</td>
</tr>
<tr>
<td>5.</td>
<td>TV</td>
<td>15</td>
<td>30.00</td>
<td>27</td>
</tr>
<tr>
<td>6.</td>
<td>Mobile apps</td>
<td>26</td>
<td>52.00</td>
<td>11</td>
</tr>
<tr>
<td>7.</td>
<td>Newspaper articles</td>
<td>6</td>
<td>12.00</td>
<td>18</td>
</tr>
<tr>
<td>8.</td>
<td>ANGRAU Scientists</td>
<td>31</td>
<td>62.00</td>
<td>12</td>
</tr>
</tbody>
</table>

*F= frequency *% =percentage

Conclusion

- Farmers accessed a variety of information related to agriculture to solve field related problems. The information accessed was about input sources & price, new varietal information, new farm machinery, weather forecast, novel technologies, market price information, govt. schemes and subsidy information, crop choice, seed rate and seed treatment, new plant protection chemicals, weedicides, fertilizer application, pest management, disease management, pesticide application, physiological disorders, techniques of water saving, storage, post-harvest, dairy & poultry breeds, high yielding fodder varieties, crop diversification, organic farming, natural resource management, agroforestry, success stories, expert talks and interviews. Based on the requirement they accessed this information.

- The information sources of farmers included input dealers, state DOA, progressive farmers, friends/neighbors/relatives, TV, mobile apps, newspaper articles and ANGRAU Scientists.

References


