CHAPTER 7

OBSERATIONS AND FINDINGS

7.1. Introduction

In the previous chapter we have seen graphical representation and data interpretation. Researcher had identified some facts which have been explained in this chapter. In the questionnaire individuals have been asked to rate the teaching tools and methods using Lickers’ scale and the observations are explained in details in this chapter.

7.2. Objective of the Study

The objective behind this study is to analyze and find out the knowledge teacher has gained and how the same knowledge faculty member is delivering it to the students.

This study is to understand different sources of transmitting the knowledge and to understand how effective and efficient these tools are in knowledge:

7.2.1. THE SOURCES OF KNOWLEDGE ACQUISITION.

- Reading text books suggested by University books help in gaining the knowledge of the subject.

From a total of 301 faculty members, 164 Faculty members strongly agree to the point that books recommended by University of Pune helps the faculty members in gaining knowledge. From a total of 301 faculty members, 127 faculty members have agreed the concept that means along with books recommended by University of Pune books, faculty member must carry some additional books. Only 8 members did not comment on this, and one faculty member have disagreed and strongly disagreed the source of knowledge gaining.
Researchers recommends considering the group, reading the books recommended by University of Pune as a major source for knowledge gaining.

- **Frequent interaction with the IT Faculty members**

  From a total of 301 faculty members, 104 members strongly agreed frequent interaction with the IT Faculty members and 107 members agreed to the fact that interaction with faculty member helps to improve the knowledge gaining. In the concept as a major source for knowledge gaining, 22 members did not comment for this and 3 members disagreed and one member strongly disagreed.

  Considering the group, the researcher agreed to the fact that frequent interaction with the IT Faculty members help members to gain the knowledge.

- **Learning from attending the seminar attending Seminars and Conferences**

  From a total of 301 faculty members, 106 members have strongly agreed to the fact that attending Seminars and conferences helps to know and gets different point of view on the subject. By attending seminars and conferences, 177 members have agreed saying that it helps in knowledge gaining. Only, 12 members have not made any comment, 5 members don’t agree and one member strongly disagrees.

  It is recommended that members need to attend Seminars and conferences for gaining the knowledge.

- **Attending lectures of other faculties on the same subject.**

  From a total of 301 faculty members, 110 members strongly agreed to the fact that attending lectures of the other faculty member helps to gain some knowledge and 167 members have agreed. From the group 23 members did not get any comment and one member did not agree the concept as one of the major source for knowledge gaining.
Researcher observes that due to ego hassles’ people did not attend the lectures of other faculty members.

- **Discussing with colleagues/ Researchers on the subject helps me to gain the knowledge.**

  From a total of 301 faculty members, 107 members strongly agreed and 171 members have agreed to the fact that discussing with colleagues and researcher going to help faculty member to gain some knowledge. Productive and interactive discussion never happens so 19 members did not commented and 4 members disagreed as a sources of knowledge gaining.

  Researcher observes that discussing with colleagues/ Researchers on the subject help the faculty member to gain the knowledge, but the only thing is discussion needs to be productive.

- **Reading recognized journals/ periodicals and constant reviewing web sites on the subject to get the knowledge.**

  From a total of 301 faculty members, 93 members strongly agreed to the concept and 171 members agreed to the fact that by reading recognized journal and periodicals and constant reviews on the subject matter helps the knowledge gaining. From the group, 26 members did not comment and 11 members did not agree to the concept as a source of knowledge gaining.

  Researcher recommends that faculty members need to constantly review the journals / periodical and read/publish articles on the subject.

- **Repeated and frequent discussion teachings help to get additional knowledge.**

  From a total of 301 faculty members, 104 members strongly agreed and 164 members have agreed the concept that repeated and frequent discussing with faculty members helps to get additional knowledge. Other faculty member, 25 members did not commented, 7 members did not agree and one member strongly disagreed the concept of a source for knowledge gaining.
Researcher feels the need for strong and frequent interaction on the subject and more precisely groups for discussion to get additional knowledge. Blogs need to be created and used for knowledge gaining.

- **Reading available software documentation on website is one of the best method**

  From a total of 301 faculty members, 125 members strongly agreed and 158 members have agreed to the fact that reading available software documentation on the website definitely helps the faculty member to get good knowledge. From the group, 13 members did not commented, 4 members did not agree and one member strongly disagreed as a source for knowledge gaining.

  Researcher recommends that authentically published articles need to be read by the members. So it is suggested to read software documentation from the source itself to help the authorized sources for knowledge gaining.

**7.2.2. Attending and participating special Programs:**

Special lecture to gain knowledge Quality Improvement Program (QIP), Faculty Development Program (FDP), Skill Upgradation program and any other faculties acquire new knowledge

From a total of 301 faculty members, 145 members strongly agree and 145 members agreed by attending and participating in QIP, FDP, and skill upgradation program helps the faculty members as a major source for knowledge gaining. From the group, 9 members did not agree and two members strongly disagreed.

Researcher recommends that objectives need to made clear to the member as a major source of knowledge gaining. It is observed that last minutes or adjustments are not going to
help. Moreover, asking the same faculty members to participate in QIP, FDP, and skill development program is not going to help or rather demotivates other faculty members.

- **Change in version facilitates new development by practising**

  From a total of 301 faculty members, 93 members strongly agrees and 186 members have agreed the concept that change in version facilitates new development by practice is going to help the faculty members in knowledge gaining. From the group, 14 members did not commented, 7 members did not agree and one member strongly disagrees to the concept for knowledge gaining.

  Researcher recommends as Practice makes man perfect, when faculty member tries to use in his/ her daily life it and this helps in knowledge gaining. At the same time, Institutes, Colleges and University change and provide latest version.

- **Attending Conferences/ Seminars updation**

  From a total of 301 faculty members, 88 members strongly agreed to the concept of knowledge gaining and 183 members agreed by attending conference and seminars. From the other faculty members, 20 members did not comment, 9 members have disagreed and one member strongly disagreed for knowledge gaining.

  Researcher strongly feels that since the colleges never give sponsorship to faculty members, either faculty member needs to give sponsorship or reduce the fees for participation.

- **Writing new articles in Research Journals**

  From a total of 301 faculty members, 87 members strongly agreed to the fact that is one of the sources for knowledge gaining and 181 members agreed that by writing new articles in the research journal the knowledge is gained. From the group, 21 members did not comment, 11 members strongly disagreed and one member disagreed for gaining knowledge.
Researcher strongly feels that since the colleges never sponsor faculty members, either faculty members need to sponsor or reduce the fees for participation and can be used as assets of the College or Institute.

- **Digital learning tools like CBT, WBT**

  From a total of 301 faculty members, 90 members strongly agreed and 180 members agreed the fact that digital learning tools help faculty members in gaining knowledge. From other members, 22 members did not commented and 9 members strongly disagreed to the concept of knowledge gaining.

  Researcher observed that most of Institute or College did not support digital learning tools such as CBT or Web Based Tools. Researcher further recommends that making use of digital library (fully operational) is going to help faculty members to gain some knowledge.

- **By studying further**

  From a total of 301 faculty members, 98 members strongly agreed to the concept of knowledge gaining and 174 members have agreed to the fact that faculty members shall learn. From the other group members, 22 members did not comment and 7 members did not agree.

  Researcher recommends that faculty members always learn new things and Institutes or Colleges need to recommend complete disbursement of fees. The complete sponsorship or disbursement of fees, need to help both Faculty members and Institution or college to look into this as a major source the for knowledge gaining.
7.2.3 The Knowledge Creation, Development and Utilization

In the Questionnaire the researcher has asked to rate the sources they think using Likert rule with 5 point scale as (5 –Most Often, 4 – Often, 3 –Sometimes, 2 – Rarely, 1 – do not use) for graduate the faculty member are expected to deliver the lecture to a large group of students the choices like:

Table 7.1: Knowledge Dissemination Methods of Teaching (Graduates)

<table>
<thead>
<tr>
<th>Ranks</th>
<th>BBCD</th>
<th>FBM</th>
<th>WBM</th>
<th>LN</th>
<th>PP</th>
<th>CS</th>
<th>BBCN</th>
<th>WBM</th>
<th>PPLN</th>
<th>PN</th>
<th>RMN</th>
<th>Chart</th>
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</tbody>
</table>

- **Black board, Chalk and Duster**

  From a group of 97 faculty members, 51 members most often make use of black board, chalk and duster and 32 members often make use of black board, chalk and duster. Faculty members who use sometimes belongs to 7, rare usage is 3 and who do not use black board chalk and duster was 4.

  Researcher observed that Black board, chalk and duster is a regular method of teaching and in some cases College or Institution is providing them other means so they hardly depend on black board, chalk and duster.

  (Most Often =51, Often =32, Sometimes =7, Rarely =3, do not use =4)

- **Flip board and Marker**

  Faculty members from the group of 97 were asked the usability of Flip board and Marker, 13 members of most often and 55 members often make use of this devise. Faculty members who use sometimes is 18, rarely and who do make use of flip board and marker goes to 9 and 2 respectively.
Researchers have observed that different colleges have different regular or pedagogy that this is not regularly used methods. (Most Often =13, Often =55, Sometimes =18, Rarely = 9, do not use =2)

- **White board and Marker**

  Faculty members were asked for usage of white board and marker, 25 members preferred it and 63 members often make use of white board and marker. Only 9 members who make use of white board and market, i.e., 6 regularly and 3 rarely using members.

  Researcher observed that this is mainly used in laboratory where dust has been protected. This is the second largest devise used by faculties after black board chalk and duster.

  (Most Often =25, Often =63, Sometimes =6, Rarely = 3, do not use =0 )

- **Lecture notes**

  Faculty members are used to lecture notes as supplementary to Black / White board chalk / marker. In this category, 27 members most often and 63 members often provides notes and hardly 6 members i.e., 5 sometimes and 1 in both rarely and who do not use respectively.

  Researcher observed lecture notes as an addition to the black board and white board and this a possible supplementary.

  (Most Often =27, Often =63, Sometimes =5, Rarely =1, do not use =1)

- **Presentation (slides) Projector**

  Faculty members were asked to rate presentation on projector, 21 members most often and 63 members often make use of this tool. 9 members who sometime makes used of projector, 3 members rarely and a member who does use of device or tool.
Researcher observed that when the diagrammatic things are to be explained or wanted in complete large amount of syllabus in an hour this tool is preferred.

(Most Often =21, Often =63, Sometimes =9, Rarely =3, do not use =1)

- **Case Study**

  Faculty members were asked to rate case study as tool, 22 members most often and 51 members often make use of this tool. 16 members sometime makes used of case study, 7 members rarely and a member who does make make use of this devise or tool.

  Researcher observed that case study is a tool which can be given to participants to know till what extend they have understood the concept and to express their views on the subject.

  (Most Often =22, Often =51, Sometimes = 16, Rarely =7, do not use =1)

- **Black board, Chalk and Duster plus Lecture notes**

  Faculty members from the group of 97 were asked the usability of Black board, Chalk and Duster plus Lecture notes, 26 members most often and 61 members use this tool often. Faculty member who sometimes makes use of these goes to 5, a member rarely makes used of this tool and 4 members do not make use of this tools.

  Researcher observed that Black board, Chalk and Duster plus Lecture notes are preliminarily used as a tool supplement to each other. After explaining the concept to students, faculty member use this tool help each other. (Most Often =26, Often = 61 Sometimes =5, Rarely =1, do not use =4)
• **White board and Marker plus Lecture notes**

Faculty members from the group of 97 were asked the usability of White board and Marker plus Lecture notes, 17 members most often and 67 members use this tool often. Faculty member who sometimes make use of these tools goes to 12, only one member rarely makes use of this tool.

Researcher observed that White board and Marker plus Lecture notes are preliminarily used as a tool supplement to each other. After explaining the concept to students, faculty member use this tool help each other. (Most Often =17, Often =67, Sometimes =12, Rarely =1, do not use =0)

• **Presentation (slides) Projector plus Lecture notes**

Faculty members from the group of 97 were asked the usability of Presentation (slides) Projector plus Lecture notes, 20 members most often and 68 members use this tool often. Faculty members who sometimes make use of goes to 8, a member who do make used this tool.

Researcher observed that Presentation (slides) Projector plus Lecture notes are preliminarily used as a tool supplement to each other. After explaining the concept to students, faculty member use this tool help each other.

(Most Often =20, Often =68, Sometimes =8, Rarely =0, do not use =1)

• **Printed notes**

Faculty members were asked to rate printed notes as tool, 27 members most often and 50 members often make use of this tool. 13 members sometime makes used of case study, 5 members rarely and two members who do use of this devise or tool.

Researcher observed that Printed notes as tool, does vary according to the subject under consideration. Printed notes depend on the faculty who promotes his/her ideas to the student.
Most often, if the faculty suggest to purchase books from the market student follow his/ her instruction. Students feel that if all notes are available in one book, they prefer the same. (Most Often =27, Often =50, Sometimes =13, Rarely =5, do not use =2)

- **Readymade notes**

  Faculty members from the group of 97 were asked the usability of readymade notes, 9 members most often and 55 members often make use of this tool. 18 members sometime makes used of case study, 6 members rarely and nine members who does not use this tool in teaching.

  Researcher observed that readymade notes as tool, does vary according to the subject under consideration. Readymade notes depend on the faculty who promotes his/her ideas to the student. During the examination times, unless prescribed, students purchase this, researcher feels that how fast one will gets notes depends on the availability of notes from the market.

  (Most Often =9, Often =55, Sometimes =18, Rarely =6, do not use =9)

- **Chart based**

  Faculty members from the group of 97 were asked the usability of chart based teaching, 9 members most often and 49 members often make use of this tool. 20 members sometime make used of charts, 14 members rarely and 5 members who does not use this tool in teaching.

  Researcher observed that chart based teaching is nowadays a very rare tool, for a small group, this is accepted but for large group it does not serve the purpose. So this tool is very rarely used by the faculty member.

  (Most Often =9, Often =49, Sometimes =20, Rarely =14, do not use = 5)

  Researcher has conducted a survey of Faculty member teaching to Post-graduate students i.e., MCA (Management, Science, Commerce), MCM, MBA, M Sc (IT/ Computer), and
other post-graduate courses with different teaching methodology or aids they used during the
dissemination or delivery of lectures were asked to rate on a Likert's scale.

For the post-graduate classes faculty member were asked to rate their choices on a 5 point scale for: (5 – Most Often, 4 – Often, 3 – Sometimes, 2 – Rarely, 1 – do not use)

**Table 7.2: Knowledge Dissemination Methods of Teaching (Post Graduates)**

<table>
<thead>
<tr>
<th>Ranks</th>
<th>BCD</th>
<th>FBM</th>
<th>WBM</th>
<th>LN</th>
<th>PP</th>
<th>CS</th>
<th>BCDLN</th>
<th>WMLN</th>
<th>LPLN</th>
<th>CSPN</th>
<th>RMN</th>
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<td>2</td>
<td>4</td>
<td>11</td>
</tr>
</tbody>
</table>

- **The Black board, Chalk and Duster**

  From a group of 285 faculty members, 166 members most often make use of black board, chalk and duster and 104 members often make use of black board, chalk and duster. Faculty members who make use of this as a tool sometimes belong to 8, rarely usage is 2 and who do not use black board chalk and duster was 5.

  Researcher observed that Black board, chalk and duster is a regular method of teaching and in some cases College or Institution is providing them.

  (Most Often =166, Often =104, Sometimes = 8, Rarely =2, do not use =5)

- **Flip board and Marker**

  Faculty members from the group of 285 were asked the usability of Flip board and Marker, 53 members most often and 126 members often make use of this devise. Faculty
members who sometimes use is 75, rarely and who do make use of flip board and marker goes to 24 and 0 respectively.

Researchers have observed that after visiting different colleges that this is not regularly used methods. (Most Often =53, Often =126, Sometimes =75, Rarely =24, do not use =7)

- **White board Marker**

  Faculty members were asked for usage of white board and marker, 25 members preferred and 63 members often make use of white board and marker. Only 9 members who make use of white board and market, i.e., 6 and rarely 3 members.

  Researcher observed that this is mainly used in laboratory where dust has been protected. This is the second largest devise used by faculties after black board chalk and duster.

  (Most Often =93, Often =176, Sometimes = 12 Rarely =4, do not use =0)

- **Lecture notes**

  Faculty members make used to lecture notes as supplementary to Black / White board chalk / marker. In this category, 80 members most often and 193 members often provides notes and hardly 11 members sometimes and 1 in both rarely and zero member who do not use respectively.

  Researcher observed lecture notes as an addition to the black board and white board this could be a supplementary.

  (Most Often =80, Often =193, Sometimes =11, Rarely =1, do not use =0)

- **Presentation (slides) Projector**

  Faculty members make used to lecture notes as Presentation (slide) Projector, 77 members most often and 186 members often provides notes and hardly 17 members sometimes and 5 in both rarely and zero member who do not use respectively.
Researcher observed that this is the most useful method after the Black / White board marker, when the syllabus needs to be covered in less time and when the diagrams are more and cryptic in nature. This method makes use of presentation tools of PowerPoint for effective presentation. (Most Often =77, Often =186, Sometimes =17, Rarely =5, do not use =0)

- **Case Study**
  
  Faculty members were asked to rate case study as tool, 70 members most often and 174 members often make use of this tool. 32 members sometime makes used of case study, 9 members rarely and 0 members who do not use this devise or tool.

  Research observed that case study is a tool which can be given to participants to know to what extend they have understood the concept and to express their views on the subject.

  (Most Often =70, Often =174, Sometimes =32, Rarely =9, do not use =0 )

- **Black board Chalk and Duster plus Lecture notes**
  
  Faculty members from the group of 285 were asked the usability of Black board, Chalk and Duster plus Lecture notes, 92 members most often and 163 members use this tool often. Faculty member who sometimes make use of goes this to 24, 3 members rarely makes use of this tool and 3 members do not make use of this tools.

  Researcher observed that Black board, Chalk and Duster plus Lecture notes are preliminarily used as a tool supplement to each other. After explaining the concept to students, faculty members use this tool help each other.

  (Most Often =92, Often =163, Sometimes =24, Rarely =3, do not use =3)
- **White Board Marker plus Lecture notes**

  Faculty members from the group of 285 were asked the usability of White board and Marker plus Lecture notes, 74 members most often and 189 members use this tool often. Faculty members who sometimes make use this of go to 17, 4 member rarely make use this tool.

  Researcher observed that White board and Marker plus Lecture notes are preliminarily used as a tool supplement to each other. After explaining the concept to students, faculty members use this tool to help each other. Most Often =74, Often =189, Sometimes =17, Rarely =4, do not use =0)

- **Presentation (Slide) Projector plus Lecture Notes**

  Faculty members from the group of 285 were asked the usability of Presentation (slides) Projector plus Lecture notes, 77 members most often and 168 members often use this tool often. Faculty member who sometimes make use of this goes to 33, 5 members rarely make use of this tool and 2 members who do make use of this tool.

  Researcher observed that Presentation (slides) Projector plus Lecture notes are preliminarily used as a tool supplement to each other. After explaining the concept to students, faculty member use this tool help each other

  (Most Often =77, Often =168, Sometimes =33, Rarely =5, do not use = 2)

- **Case Study plus Printed notes**

  Faculty members from the group of 285 were asked the usability of Case Study with printed notes, 49 members most often and 172 members use this tool often. Faculty member who sometimes make use of goes to 44, 16 members rarely make use of this tool and 4 members who do make use of this tool.
Researchers observed that this tool is useful when the subject itself is conceptual and requires deep understanding. This tool is useful when case study is given and after some time solution for the same is given after discussion in the class.

(Most Often =49, Often = 172, Sometimes =44, Rarely =16, do not use =4)

- **Readymade notes**

  Faculty members from the group of 285 were asked the usability of readymade notes, 52 members most often and 158 members use this tool often. Faculty member who sometimes make use of go to 48, 16 members rarely make use of this tool and 11 members who do make use of this tool.

  Researcher observed that for post-graduate students is expected to visit library and refer different books and thereby study the curriculum. That is why, among all the above mentioned this tool/ method is not so popular. (Most Often =52, Often =158, Sometimes =48, Rarely =16, do not use =11)

- **Computer Based Training (CBT) CD Tutor**

  From the group of 285 faculty members were asked the usability of CBT CD Tutor, 42 members most often and 150 members often use this tool often. Faculty member who sometimes make use of go to 74, 13 members rarely make use of this tool and 6 members who do make use of this tool.

  Researcher observed that this is not so popular tool, as it is done with less interaction between Faculty member and students. For distance learning courses, CBT CD Tutor is mostly used. The students are undergoing course where faculty members are not available to the students. Academics do not prefer such type of method. (Most Often =42, Often =150, Sometimes =74, Rarely =13, do not use =6)
- **Web Based Training (WBT) Internet based**

  Faculty members from the group of 285 were asked the usability of Web Based Training, 38 members most often and 141 members use this tool often. Faculty member who sometimes make use of goes to 92, 10 members rarely make use of this tool and 4 members who do not make use of this tool.

  Researcher observed that one of the challenges by the faculty member is internet. They need to share the machines even for browsing their mails. It is observed that some of them aren’t of this method. In this method, interaction with faculty is there but is quite famous for cloud based training or interactive chats which requires huge amount of investments.

  (Most Often =38, Often =141, Sometimes = 92, Rarely =10, do not use =4)

- **Learning Management System (LMS) CD based**

  Faculty members from the group of 285 were asked the usability of LMS based method, 31 members most often and 143 members often use this tool. Faculty member who sometimes make use of this go to 94, 12 members rarely make use of this tool and 5 members who do make use this tool.

  Researcher observed that few faculty members were not aware of this tool. Some faculty member knew that this is LMS CD tutor, and not so popular in the faculty community. This mode of training is available in Distance Learning Mode. Since University of Pune do not permit distance education this method is void.

  (Most Often =31, Often =143, Sometimes = 94, Rarely =12, do not use =5)
• **Video Conferencing**

Faculty members from the group of 285 were asked about the usability of Video Conference method, 27 members most often and 120 members use this tool often. Faculty member who sometimes make use of this go to 112, 18 members rarely make use of this tool and 8 members who do not make use of this tool.

Researcher observed that this method is not at all effective. To address it to the masses this method is used. There are certain challenges as to setting up of infrastructure and organizing and recording, restoring it when required and repetitively using it.

(Most Often =27, Often =120, Sometimes =112, Rarely =18, do not use =8)

• **Wi-Fi based learning**

Faculty members from the group of 285 were asked about the usability of Wi-Fi based learning method, 28 members most often and 104 members use this tool often. Faculty member who sometimes make use of this method go to 126, 19 members rarely make use of this tool and 8 members who do not make use of this tool.

Researcher observed that though this is method which is not that popular but appreciated by faculty members (i.e. techy). The cost of setting such an environment will take some time.

(Most Often =28, Often =104, Sometimes =126, Rarely =19, do not use =8)

• **Pedagogical (which may include Interactive, Audio, Video, CD based)**

Faculty members from the group of 285 were asked about the usability of Pedagogical method, 25 members most often and 97 members often use this tool often. Faculty member who sometimes make use of this tool go to 135, 23 members rarely make use of this tool and 5 members who do not make used this tool.
Researcher observed that this method is gaining popularity as students appreciate learning with audio, video and interactive learning. It is in the initial stage that is why it not so famous. Faculty members need to make use of this to bring clarity in curriculum.

(Most Often =25, Often =97, Sometimes =135, Rarely = 23, do not use =5)

- **Tablet PC (Learn Pad)**

  Faculty members from the group of 285 were asked about the usability of Tablet PC method, 26 members most often and 93 members often use this tool. Faculty member who sometimes make use of goes to 133, 27 members rarely make use of this tool and 6 members who do not make use of this tool.

  Researcher observed that this tool is famous for online learning, when the group is small and laptop facility is provided then PC Tablet mode is effective. To some extent, this tool is not appreciated by students. The biggest challenge is maintainability.

  (Most Often =26, Often = 93, Sometimes =133, Rarely =27, do not use =6)

- **e-learning (referring Web Site)**

  Faculty members from the group of 285 were asked about the usability of e-learning method, 47 members most often and 138 members often use this tool. Faculty members who sometimes make use of this tool go to 87, 12 members rarely make use of this tool and 1 member who doesn’t do make use of this tool.

  Researcher observed that e-learning method is gaining popularity, even faculty member appreciate such kind of training, for both regular and distant learning. University of Pune never conducts distance learning mode, but other Universities do conduct such training.

  (Most Often =47, Often =138, Sometimes =87, Rarely =12, do not use =1)
• **Audio-Video based teaching**

Faculty members from the group of 285 were asked about the usability of Audio-Video based teaching method, 33 members most often and 174 members often use this tool. Faculty members who sometimes make use of this go to 69, 6 members rarely make use of this tool and 2 members who don’t make use of this tool.

Researcher observed that audio-video based learning will be appreciated by faculty members. (Most Often = 33, Often =174, Sometimes =69, Rarely =6, do not use =2)

• **Project based learning**

Faculty members from the group of 285 were asked the usability of Project based learning method, 60 members most often and 165 members use this tool often. Faculty members who sometimes make use of this go to 48, 5 members rarely make use of this tool and 1 member who doesn’t make use of this tool.

Researcher observed that project based learning or on the job learning, is much appreciated when students gain some expertise. Faculty member likes this method of teaching, as they learn and present it before the board and answer the questions posed by faculty members. (Most Often =66, Often =165, Sometimes = 48, Rarely =5, do not use =1)

• **Question Paper Solving plus Case Study**

Faculty members from the group of 285 were asked about the usability of Question Paper solving and case study method, 56 members most often and 164 members often use this tool often. Faculty member who sometimes make use of this tool goes to 56, and 9 members rarely make use of this tool.

Researcher observed that this method is very common among faculty members, as this gives confidence in students mind to solve any question paper and case study.
• **Role play and mock training (Games)**

Faculty members from the group of 285 were asked the usability of role play and mock training method, 31 members most often and 150 members use this tool often. Faculty member who sometimes make use of goes to 69, 33 members rarely make use of this tool and 2 members who do make used this tool.

Researcher observed that this is the oldest and most popular method of teaching.

(Most Often =31, Often =150, Sometimes = 69, Rarely =33, do not use =2)

• **Showing Charts**

Faculty members from the group of 285 were asked the usability of showing charts during training method, 26 members most often and 105 members use this tool often. Faculty member who sometimes make use of goes to 76, 69 members rarely make use of this tool and 9 members who do make used this tool.

Researcher observed that this is the oldest and most popular method of teaching.

(Most Often =26, Often =105, Sometimes = 76, Rarely =69, do not use =9)

• **Study tour and Industrial Visit**

Faculty members from the group of 285 were asked the usability of Study tour and Industrial Visit method, 38 members most often and 109 members use this tool often. Faculty member who sometimes make use of goes to 68, 65 members rarely make use of this tool and 5 members who do make used this tool.

Researcher observed that this is the oldest and most popular method of teaching.

(Most Often =38, Often =109, Sometimes =68, Rarely = 65, do not use = 5)
• **Kinesthetic**

Faculty members from the group of 285 were asked about the usability of Kinesthetic training method, 47 members most often and 134 members use this tool often. Faculty member who sometimes make use of this go to 58, 45 members rarely make use of this tool and one member who does not make use of this tool.

Researcher observed that this is the oldest and most popular method of teaching.

(Most Often =47, Often =134, Sometimes =58, Rarely =45, do not use =1)

• **Learning based on hands-on work and engaging in activities**

Faculty members from the group of 285 were asked about the usability of Learning based on hands-on work and engaging in activities method, 72 members most often and 154 members often use this tool. Faculty member who sometimes make use of this go to 44, 13 members rarely make use of this tool and 2 members who do not make use of this tool.

Researcher observed that this is the oldest and most popular method of teaching.

(Most Often =72, Often =154, Sometimes =44, Rarely =13, do not use =2)

• **Collaboration allows students to actively participate in the learning process**

Faculty members from the group of 285 were asked about about the usability of Collaboration which allows students to actively participate in the learning process method, 84 members most often and 158 members often use this tool often. Faculty member who sometimes make use of this go to 34, 3 members rarely make use of this tool and one member who do make used this tool.

Researcher observed that this is the oldest and most popular method of teaching.

(Most Often = 84, Often =156, Sometimes =34, Rarely =3 , do not use = 1)
- **Experiential learning (the process of making meaning from direct experience)**

  Faculty members from the group of 285 were asked about the usability of experiential learning method, 84 members most often and 163 members often use this tool. Faculty member who sometimes make use of this go to 34, 3 members rarely make use of this tool and 1 members doesn’t make use of this tool.

  Researcher observed that this is the oldest and most popular method of teaching. Learn from the mistake, never commit the same in future.

  (Most Often =84, Often =163, Sometimes =34, Rarely =3, do not use =1)

- **Forming a Students group and circulating notes for groups**

  Faculty members from the group of 285 were asked the usability of forming a Students group and circulating notes for groups method, 97 members most often and 141 members often use this tool. Faculty members who sometimes make use this go to 36, 11 members rarely make use of this tool.

  Researcher observed that this is the oldest and most popular method of teaching.

  (Most Often =97, Often =141, Sometimes =36, Rarely =11, do not use = 0)

- **Maps, transparencies (OHP), globes, Flash Cards, Models.**

  Faculty members from the group of 285 were asked about the usability of Maps, transparencies (OHP), globes, Flash Cards, Models training method, 76 members most often and 84 members often use this tool. Faculty member who sometimes make use of this go to 46, 69 members rarely make use of this tool and 10 members who do not make use this tool.

  Researcher observed that this is the oldest and most popular method of teaching. With LCD projector use of OHP, globes, flash cards are becoming obsolete.

  (Most Often =76, Often = 84, Sometimes =46, Rarely =69, do not use =10)
7.2.4. Knowledge Storing

Different methods used by the faculty members to remember during the class are:

1. Noting down the important points on the some corner of blackboard
2. Slide presentation
3. Lecture plan
4. Referring help level
5. Scribble points on piece of paper use them in class.

The ranks table to show that the most preferred knowledge storage technique is slide presentation (mean rank = 3.48), the second most preferred technique is lecture plan (mean rank = 3.41), followed by referring help level (mean rank = 3.28), scribble down points on piece of paper and use them in class (mean rank = 3.04), and noting important points for discussion on the board (Mean = 3.39).

Researcher comes to the conclusion that Knowledge storage techniques used by the faculty members to remember in the order of preference the points are slide presentation, lecture plan, referring help level, scribble down points on piece of paper and use them in class and noting important points for discussion on the board. Faculty member while making the presentation first prepares two slides, one for topic and other for objectives of the study and talks about entire flow of class. Second, preference of the faculty member is going as per lecture plan.
### Table 7.3: Knowledge Dissemination Methods of Teaching (Digital -Post Graduates)

<table>
<thead>
<tr>
<th>Ranks</th>
<th>CBT</th>
<th>WBT</th>
<th>LMS</th>
<th>VC</th>
<th>WIFI</th>
<th>PG</th>
<th>TPC</th>
<th>EL</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>42</td>
<td>38</td>
<td>31</td>
<td>27</td>
<td>28</td>
<td>25</td>
<td>26</td>
<td>47</td>
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<tr>
<td>4</td>
<td>150</td>
<td>141</td>
<td>143</td>
<td>120</td>
<td>104</td>
<td>97</td>
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<td>3</td>
<td>74</td>
<td>92</td>
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<td>5</td>
<td>8</td>
<td>8</td>
<td>5</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

### Table 7.4: Knowledge Dissemination Methods of Teaching (Other -Post Graduates)

<table>
<thead>
<tr>
<th>Ranks</th>
<th>AVI</th>
<th>PBT</th>
<th>QPS</th>
<th>RPMT</th>
<th>CHT</th>
<th>ST</th>
<th>Kinesics</th>
<th>C</th>
<th>EL</th>
<th>GRP</th>
<th>OTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>33</td>
<td>66</td>
<td>56</td>
<td>31</td>
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<td>38</td>
<td>47</td>
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<td>84</td>
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<td>4</td>
<td>174</td>
<td>165</td>
<td>164</td>
<td>150</td>
<td>105</td>
<td>109</td>
<td>134</td>
<td>154</td>
<td>163</td>
<td>141</td>
<td>84</td>
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<tr>
<td>3</td>
<td>69</td>
<td>48</td>
<td>56</td>
<td>69</td>
<td>76</td>
<td>68</td>
<td>58</td>
<td>44</td>
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<td>65</td>
<td>45</td>
<td>13</td>
<td>3</td>
<td>11</td>
<td>69</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>9</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>
7.2.5. Feedback Mechanism Adopted by the Management Institutes / Colleges

To analyze the feedback mechanism adopted by the management institutes in upgrading the knowledge of IT Faculty on regular basis.

Table 7.5: Feedback Mechanism

<table>
<thead>
<tr>
<th>QIP, FDP, SUP</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>146</td>
<td>144</td>
<td>7</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>By Attending QIP, FDP, SUP</td>
<td>161</td>
<td>134</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>By Attending Conferences, Seminars</td>
<td>98</td>
<td>173</td>
<td>13</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Digital Learning tools (CBT, WBT)</td>
<td>103</td>
<td>173</td>
<td>13</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

It is noticed that in Quality Improvement Programme (QIP), Faculty Development Programme (FDP) and Skill Upgradation Programme (SUP) among which the 146 members (48.50%) strongly feel that the feedback mechanism helps them to improve, 144 members (47.84%) thinks that they agree to the concept that feedback mechanism helps to improve, 7 members (2.32%) did not comment, 3 members (0.99%) Disagree and one member (0.33%) strongly disagreed the feedback mechanism.

Researcher feels that feedback helps to find out the way to improve quality education. More and more Quality Improvement Programme (QIP), Faculty Development Programme (FDP) and Skill Upgradation Programme (SUP) are being conducted, so that it becomes easy for faculty members to participate. Most of the colleges and institutes has started with prior approval by taking the sponsorship from University of Pune.

Researcher feels that FDP, QIP and SUP require participation from the faculty members. It is their urge and willingness to get knowledge about the subject. University of Pune shall make it compulsory that Faculty member must undergo at least 2-3 programmes of FDP, QIP and SUP in an academic year. Faculty member requires sponsorship from the
Colleges or Institutes, in the questionnaire 137 members strongly agree (53.48%), 134 members (44.51%) agree to the concept, 4 members (1.31%) did not comment, one member (0.33) disagrees and another member (0.33) strongly disagrees to the concept.

Researcher strongly feels that Colleges and Institutes should allow Faculty member by keeping the work aside and motivate the faculty member and organize for sponsorship FDP, QIP and SUP.

Faculty members need to be focused towards the knowledge gaining and different ways of knowledge gaining. The Colleges and Institutes motivate faculty members to participate in Seminars and Conferences by sponsoring the amount and time.

Feedback is taken from the Faculty member, in the questionnaire, to improve IT faculties to upgrade their skills, 98 members (32.55%) strongly agree to the concept, 173 members (52.47%) do agree, 13 members (4.31%) do not comment, 9 members (2.99%) disagree and 2 members (0.66%) strongly disagree.

Researcher strongly feels that the Colleges and Institutes motivate faculty members to participate in Seminars and Conferences by sponsoring the amount and time

Feedback mechanism helps to improve through Digital Learning tools like CBT, WBT. The colleges and Institute must support the environment where in faculty members get the benefit by using CBT, WBT. Since University of Pune is not supporting digital media, it is up to the Colleges and Institutes work on this. Faculty member were asked for the digital media, 103 members (34.21%) strongly agree, 173 members (57.47%) agree, 10 members (3.32%) disagree and 2 members (0.66%) strongly disagree.
Researchers strongly feel that Faculty members should make use of digital learning tools like CBT, WBT, and some Colleges and Institutes has already started distributions of CBT for courses.

7.2.6. Maintaining and Upgrading the Knowledge

To understand feedback mechanism adopted by the management institutes/college in maintaining and upgrading the knowledge of IT faculty members on regular basis.

Table 7.6: Adoption of Feedback Mechanism

<table>
<thead>
<tr>
<th></th>
<th>Library books availability</th>
<th>Internet connection</th>
<th>Sponsorship for Conference, Seminars</th>
<th>Sponsorship for QIP,FDP,MDP</th>
<th>Availability of Media in Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALWAYS</td>
<td>175</td>
<td>132</td>
<td>113</td>
<td>99</td>
<td>115</td>
</tr>
<tr>
<td>SOMETIMES</td>
<td>108</td>
<td>136</td>
<td>140</td>
<td>145</td>
<td>117</td>
</tr>
<tr>
<td>NEVER</td>
<td>18</td>
<td>33</td>
<td>48</td>
<td>57</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>301</td>
<td>301</td>
<td>301</td>
<td>301</td>
<td>301</td>
</tr>
</tbody>
</table>

It is expected that since the Institute/College authorities do face certain challenges faced by faculty members.

- **Library Books:** From a total 301 faculty members, 175 members always faced this problem by not getting the books in time, 108 members sometimes faced this challenge and they need to look out for some alternated source and 18 members never face this challenges.

Researcher recommend that few books need to be used only for reference purpose and a separate section need to made available for the teachers teaching the same subjects. Further, it is suggested that recommendation of books need to be made and arrangements to be made at least per month. Borrowing books from other institutes library, motivating students to donate unused
books, photocopying out-of-print books etc. Researcher also recommends a strong digital library, wherein members can avail the books.

- **Internet Connection:** From a total 301 faculty members, 131 members do feel that internet connection is required always or they do not get the facility of internet, 134 members think that they sometimes get internet connection and 33 members never face the challenge of Internet connection.

  Researcher suggests that as AICTE Mandatory disclosure it is compulsory to have internet facility or web development for which it is necessary to have internet line connection. If the same thing is extended to Faculty members (with Firewall protection), this issue will be resolved.

- **Sponsorship for QIP/ FDP/ MDP:** From a total 301 faculty members, 112 members do face this challenges always, 139 members sometimes feel the necessity of sponsoring for Quality Improvement Programme (QIP), Faculty Development Programme (FDP), Management Development (MDP), and 47 members never face this challenge. Researcher suggests that the top management people are intelligent enough to decide whom to sponsor or not. Moreover, it is suggested that faculty members need to mention that they would like to go for QIP, FDP and MDP. For sponsorship of research paper, it is their interest and faculty member need to organize the time table.

- **Availability of media in the class:** From a total 301 faculty members, 98 members do feel that they always face this challenge, 143 members sometimes face this challenge and 57 members never face this problem. Research suggests that in every class room and seminars arrangements need to be made so that transportation of equipment’s needs to be
minimized. The challenge is faced by faculty members because of seminars/ guest lectures the shifting of equipments is done.

7.2.7. Acquiring Modern Information Technology

To analyze problems experienced by the IT Faculty members in acquiring modern information technology

Researcher realized that the modern techniques need to be adopted, in the questionnaire for post-graduate courses, questions were posed to rank the methods. Total 285 members are teaching to post-graduate courses and the data collected is applied to only post-graduate courses.

Table 7.7: IT Faculty member’s adoption of modern methods.

<table>
<thead>
<tr>
<th>Method</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBT CD Tutor</td>
<td>5</td>
<td>42</td>
<td>38</td>
<td>31</td>
<td>27</td>
<td>28</td>
<td>25</td>
<td>26</td>
<td>47</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WBT Internet Based</td>
<td>4</td>
<td>150</td>
<td>141</td>
<td>143</td>
<td>120</td>
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<td>138</td>
<td>174</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>LMS CD Based</td>
<td>3</td>
<td>76</td>
<td>93</td>
<td>94</td>
<td>113</td>
<td>127</td>
<td>136</td>
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<tr>
<td>Video Conferencing</td>
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<td>10</td>
<td>13</td>
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<td>19</td>
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<td>27</td>
<td>12</td>
<td>6</td>
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<td></td>
<td></td>
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<tr>
<td>Wi-Fi Based Learning</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>2</td>
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<td></td>
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<tr>
<td>Pedagogical Learning</td>
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<tr>
<td>Tablet PC</td>
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<td>Audio-Video based learning</td>
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</table>

CBT CD Tutor:

From the total of 285, 42 (14.74%) faculty members most often make use of CBT CD Tutors, 150 (52.63%) faculty member come under usage of often, 76 (25.96%) members do not comment, 13 (4.56%) members make rare uses and 4 (2.11%) members do not use Computer Based Training.

Researcher recommends that 52.63% often make use of the CBT CD Tutor.
**WBT Internet Based:**

From the total of 285 faculty member, 38 (13.33%) members most often make use of Web Based Tutors, 141 (49.47%) members often uses, 93 (32.28%) members do not commented, 10 (3.51%) members make rarely uses and 3 (1.40%) members did not use Web Based Tutors (WBT).

Researcher recommends that 49.47% often make use of the WBT Internet based.

**LMS CD Based:**

From the total of 285 faculty member, 31 (10.88%) members most often make use of Learning Management System, 143 (50.18%) members often uses, 94 (32.98%) members do not commented, 13 (4.21%) members make rarely uses and 4 (1.75%) members do not use Learning Management System.

Researcher recommends that 50.18% often make use of the LMS CD.

**Video Conferencing:**

From the total of 285 faculty member, 27 (9.47%) members most often make use of Video Conferencing, 120 (42.11%) members make often uses, 113 (39.30%) members didn’t comment, 18 (6.32%) members make rarely uses and 7 (2.81%) members do not use Video conferencing.

Researcher thinks that Video Conferencing is yet to get popularity as far as dissemination method.
**Wi-Fi Based Learning:**

From the total of 285 faculty member, 28 (9.82%) members most often make use of Wi-Fi Based Learning, 104 (36.49%) members often uses, 127 (44.21%) members do not commented, 19 (6.67%) members make rarely uses and 6 (2.81%) members do not use Wi-Fi based learning.

Researcher recommends more and more Wi-Fi based learning campuses need to be established.

**Pedagogical Learning:**

From the total of 285 faculty member, 25 (8.77%) members most often make use of Pedagogical Learning, 97 (34.04%) members often uses, 136 (47.37%) members do not commented, 23 (8.07%) members make rarely uses and 4 (1.75%) members do not use Pedagogical learning.

Researchers recommend more and more Pedagogical learning methods shall be applied to teaching.

**Tablet PC:**

From the total of 285 faculty member, 26 (9.12%) members most often make use of Tablet PC based Learning, 93 (32.63%) members often uses, 134 (46.67%) members do not commented, 27 (9.47%) members make rarely uses and 5 (2.11%) members do not use Tablet PC based learning.

Researchers feel that this media is yet to get popularity, as this mode is expensive. With lowering of prices of Tablet, this method is used as a tool for presentation and project presentation.
**E-Learning:**

From the total of 285 faculty member, 47 (16.49%) members most often make use of e-Learning, 138 (48.42%) members often make uses, 88 (30.53%) members did not comment, 12 (4.21%) members make rarely uses and one member do not use e-learning (0.35%).

Researcher feels that e-learning is not popular among the faculty members.

**Audio-Video Based learning:**

From the total of 285 faculty member, 47 (16.49%) members most often make use of Audio-Video based learning, 174 (61.05%) members often make uses, 70 (24.56%) members did not comment, 6 (2.11%) members make rarely uses and 2 (0.70%) members do not use Audio-Video based learning.

Researcher recommends Audio-Video Based learning as it takes care of visual-sound learning and faculty member appreciates.
7.2.8. Digital Learning Methods

To understand the popularity of the digital learning methods of teaching with traditional one for the IT Faculty members.

<table>
<thead>
<tr>
<th>Faculty Member adoption of Teaching Methods</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Teaching</td>
<td>280</td>
</tr>
<tr>
<td>Digital Learning</td>
<td>12</td>
</tr>
<tr>
<td>Cognitive / Digital</td>
<td>9</td>
</tr>
</tbody>
</table>

From a group of 301 faculty members, Cognitive teaching methods used were 280 (93%), Digital learning methods are 12 (4%) and both (Cognitive / Digital) were 9 (3%).

Researcher observes that Cognitive teaching methods is common and among faculty members 93%, digital learning methods to not popular (4%) and among faculty member to who uses both is 3%.

To study, overall, expected that the finding of the study will eminent due to IT institutes and over stakeholders to upgrade in learning emerging strategies of knowledge during various programs like Quality Improvement Programme (QIP), Faculty Development Programme (FDP), Skill Development Projects, Refreshers Course/Workshop etc. in Information Technology in the bidding the faculty for excellent in high IT education. The researcher has observed that Digital Learning methods help the IT Faculty members to significantly update their knowledge.

In this chapter researcher focuses on the finding and observation from a survey conducted by the researcher. The next chapter gives the concluding remark by the researcher that is carried out in the research study.