SUMMARY AND CONCLUSION

This chapter presents the entire research work in nutshell. It encompasses a glimpse from each chapter in the same sequence as they appear in the present work. Early years are very important as experiences in early years help to shape the future personality of a child. Each child has a unique profile, therefore, there is a need to identify and cater to the varied needs of the children. Here preschool teachers play a very important role, as teachers are the crux of the education system and they further facilitate to maintain interests of children in the classroom. Multiple intelligences theory (MIT) provides educators and teachers with new ways of thinking, observing, understanding and enhancing strengths and weaknesses of children. However, this theory is not an end in itself but it paves the way to think in a non-conventional way of teaching and learning. According to this theory, each child has eight intelligences and teachers can give opportunities to flourish these intelligence profiles among children in the classroom. These intelligences are linguistic, logical mathematical, spatial, bodily kinesthetic, interpersonal, intrapersonal, musical and naturalist. Classroom activities can be designed in such a way that each activity addresses three or four intelligences at a time. Even though preschool classrooms are flooded with activities; objectives behind each activity is not clear to the preschool teachers. Therefore, to find out is there a need to train teachers on multiple intelligences theory, so that its effectiveness can be examined in a preschool setting.

Objectives
The present study was conducted on preschool teachers and children to explore the effect of teachers’ training on MIT on multiple intelligences (MI) of preschool children. Knowledge level and preferences of MI were assessed among preschool teachers prior to intervention. An intervention programme was planned and implemented among teachers. Knowledge level and preferences among teachers were observed from pretest to posttest. Comparison between experimental and control group of teachers and children was investigated. Effects of variables pertaining to teachers were also examined on the knowledge gained and MI preferences of teachers. Finally, gender differences between the preschool children’s multiple intelligences were explored.
Materials and methods
A pre-post-intervention trial along with a control group has been undertaken. Four ICSC schools from a similar locality were selected from western suburbs of Mumbai to have a homogenous group, which were willing to be part of the research. Two schools were chosen in the experimental group and the other two schools represented the control group. Teachers in the experimental group were 46 and in the control group, there were 54 teachers. The study had 100 preschool teachers and 460 children of 3-4 years age group, 364 children from the same sample were also observed by teachers. Data was collected with the help of a questionnaire, rating scale and observation schedule based on MIT. Knowledge level was assessed with a questionnaire, which consisted of two sections; knowledge of eight intelligences and knowledge of multiple intelligences involved in activities. MI preferences of teachers were appraised with the help of a five-point rating scale. Classroom observations were recorded with time sampling method on an observation sheet based on all intelligences. Content and construct validity of tools was established with the help of experts and factor analysis respectively. Reliability of the tools was accomplished with the help of Cronbach's Alpha. Data collection commenced with classroom observation followed by pretest among teachers. Three workshops were conducted for teachers in the experimental group alternated with observation of children in the classroom followed by posttest. In the control group pretest and posttest for teachers with classroom observation was accomplished without any intervention. Data collected was coded and analyzed statistically using the statistical package SPSS 16. Observations recorded were also presented in the form of graphs and analyzed qualitatively.

Results
The main findings of the research were:

- The general profile of teachers indicated that experimental teachers (55%) were more in the age group of 20-30 years of age while the teachers in control group (45%) turned up to be more in the age bracket of 41-50. For educational qualification, most of the teachers in experimental (74%) and control group (55%) were graduates while least teachers were in the category of S.S.C. Regarding additional educational qualification, most of the teachers had E.C.E. diploma in
both experimental group (46%) and control group (57%). Twenty two percent of the teachers had no additional qualification in the control group while this percentage was least in the experimental group. Majority of the teachers in the experimental (63%) and control (59.30%) group belonged to the category of 0-5 years of experience. Teachers were not experienced more in the preschool sector. In the category of married with children, the number of teachers in control group (57.40%) was more than the experimental group (45.70%) followed by the category of unmarried teachers. Most of the teachers were Hindu in both experimental (80.40%) and control (79.60%) group.

- In the present study, knowledge level among teachers was studied on eight intelligences viz. linguistic, logical mathematical, spatial, bodily kinesthetic, interpersonal, intrapersonal, musical and naturalist. General awareness of MIT and MI involved in activities were also explored. Total level of knowledge included knowledge of MI, general awareness and MI activities. In the experimental group, 42% of teachers were not aware about the MIT. Main source of knowledge in both the groups was through attending an exhibition. Out of the eight intelligences, on the range of 0-4, teachers showed highest knowledge of naturalistic intelligence, in both experimental and control group while least level of knowledge was portrayed on interpersonal intelligence in experimental group and on linguistic intelligence in control group. On the range of 0-7 for general awareness of MIT, knowledge level of both the groups experimental (\(\bar{X} = .91\)) and control (\(\bar{X} = 1.91\)) exhibited minimal knowledge. Ten MI activities were designed to know the awareness of teachers about activities involving multiple intelligences being executed in the classrooms, viz. mock bridges, clay modeling, storyboard, rhyming, watching natural phenomenon, dancing, make-believe play, collecting quills, chants, and bubble talk. For MI activities, on the scale of 0-3, teachers revealed highest level of knowledge on ‘dancing’ activity in experimental group while in control group level of knowledge was high on ‘story board’ activity. Both the activities mainly relied on bodily kinesthetic intelligence and interpersonal intelligence. On analyzing MI preferences, teachers of both the groups preferred linguistic and spatial intelligence while the least preferred intelligence in the experimental group was musical and intrapersonal in the control group. Teachers’
knowledge level and preferences of MI did not synchronize with each other, which further affected the classroom practices.

- On comparing both the groups for knowledge of MI, an independent t test revealed a significant difference between the mean scores from pre to post between both the groups. The experimental group depicted higher change in the mean scores than the control group, which indicated that the intervention programme had effective implication on the knowledge of teachers in treatment group. Change in mean scores for general awareness of MIT was highest followed by interpersonal intelligence when comparing two groups. Least change was found in logical mathematical and musical intelligences. For all MI activities, there was significant change between teachers of both the groups. However, the magnitude of difference in change in the knowledge for each activity was different. MI activities like storyboard and bubble talk received greater magnitude of change in mean scores between both the groups while least change was observed in watching natural phenomenon activity between both the groups.

- The paired t test scores were calculated for the knowledge level and preferences for MI among teachers, before and after the intervention. The highest change in knowledge was demonstrated for general awareness on MIT followed by interpersonal intelligence while least change was observed in the logical mathematical and linguistic intelligence. The result portrayed that there was significant effect of intervention programme on the level of knowledge on MIT in treatment group. On comparing the knowledge level of MI activities, the results of the paired t-test showed significant variance in the mean scores of all MI activities before and after intervention. The highest change in mean knowledge was for the MI activities, storyboard and collecting quills. Least change in knowledge was found in the activities like watching natural phenomenon and make believe play. For the MI preferences, significant differences existed only for bodily-kinesthetic and naturalistic intelligences. Variations in mean scores were shown from pre to post but paired t-test did not reveal any significant results, indicating possible difference in the preferences for rest of the six intelligences.

- Effect of various variables like age, educational qualification, work experience, marital status, and religion on the knowledge level of MI was analyzed. Age showed significant effect on change in the knowledge level of linguistic, bodily kinesthetic and musical intelligences of teachers while there was no statistical
significant difference found between means of three age groups for the change in knowledge level of rest of the intelligences. Change in the knowledge of linguistic and musical intelligences was found to be more among older teachers. Contrary to this, change in knowledge of bodily kinesthetic intelligence was more in younger group. No statistical significant difference was found between the means of three age groups with regard to the knowledge of MI activities and total knowledge level among teachers. ANOVA ruled out any statistically significant difference between the three categories of educational qualification for change in level of knowledge, MI activities and total knowledge level of MI. There was significant effect of work experience on the change in the knowledge level of linguistic intelligence, 0-5 years teachers depicted more knowledge as compared to their counterpart. For MI activities, teachers with work experience 5-10 years displayed significant difference for make believe play. Knowledge for rest of the intelligences and MI activities and total knowledge level means of three categories of work experience did not differ. Significant change in the mean values of knowledge level for bodily kinesthetic and intrapersonal intelligences was noticed for the three categories of marital status. Unmarried teachers displayed more gain in knowledge for both of the intelligences. Categories of marital status differed significantly only with ‘dancing activity’, where unmarried teachers displayed more knowledge. Total knowledge level of MI did not differ significantly with the means of three categories of marital status. ANOVA showed significant mean difference for change in the knowledge level of logical mathematical intelligence where Muslim teachers acquired more knowledge than other two religions. For MI activity, religion showed significant effect on the knowledge of ‘story board’ activity, where Christian teachers acquired more knowledge than counterparts did. Categories of religion did not differ with the total knowledge level of knowledge of MI. Therefore, it can be summarized that none of the variables were affecting the total knowledge level of MI among teachers.

- MI preferences did not vary significantly with any of the variables, viz. age, educational qualification, work experience, marital status, and religion except for the bodily kinesthetic intelligence where younger teachers preferred this intelligence as compared to the older ones.

- On comparing observation of MI among children in the classroom, it was revealed that children in experimental group revealed higher magnitude of results than
children in the control group. Bodily kinesthetic intelligence was found to be dominant while naturalistic intelligence was found to be least among children of both the groups. Overall, females exhibited more intelligence except for bodily kinesthetic and naturalistic intelligence, where males turned up to be more intelligent as compared to the female in both the groups.

- In the present study, MI of children was observed through time sampling method four times, alternating with three workshops for teachers to observe effect of teachers’ training on demonstration of MI among children. In *linguistic intelligence*, observations indicated that there was a gradual increase in the demonstration of intelligence in both the males and females from first (male=326, female=340) to fourth (male=602, female=627) observation. However, males showed less intelligence in the third observation.

- For *logical Intelligence*, children showed a fair increase in the demonstration of logical intelligence from first (male=266, female=236) to fourth (male=364, female=386) observation except for the second where it decreased in both male and female.

- Results for *spatial intelligence* depicted consistent increase in the demonstration of the intelligence from first observation (male=130, female=131) to fourth observation (male=196, female=290) irrespective of the activities taking place in the classroom. Females surfaced to be more spatially oriented than the male.

- Children exhibited coherent increase from first (male=797, female=645) to fourth (male=1009, female=888) observation except for females who demonstrated less intelligence in the third observation as compared to second observation for *bodily kinesthetic intelligence*. Males tended to be more kinesthetically intelligent than the female.

- There was an increase in *musical intelligence* from first (male=226, female=289) to third (male=239, female=322) observation but decreased in the fourth observation. Females tended to be more musically oriented than males.

- Females portrayed more *interpersonal intelligence* than the males. Results indicated positive change in intelligence from first (male=325, female=346) to fourth (male=351, female=458) observation. Demonstration of intelligence of males dropped in second and third observation while for females; it was found less in third observation.
Children delineated uniform increase in the *intrapersonal intelligence* from first (male=309, female=303) to fourth (male=565, female=583) observation in both males and females. Overall, females were found to be more intrapersonal intelligent than males.

Children's *naturalistic intelligence* increased significantly from first (male=32, female=31) to fourth (male=297, female=237) observation, irrespective of the activities happening in the classroom. Children exhibited very low naturalistic intelligence as compared to the other intelligences. In spite of strong knowledge of naturalistic intelligence among teachers, this intelligence was not demonstrated in the classroom setting by children.

Independent t test revealed significant difference between MI of males and females for linguistic, musical and interpersonal intelligences. Females were found to be more intelligent than males for aforementioned intelligences.
CONCLUSION
The findings of this research helped in drawing following conclusions:
1. Majority of the preschool teachers were in the middle age, graduates, less experienced, married with children, and Hindu.
2. Preschool teachers in treatment group exhibited low level of knowledge of MIT and MI activities. Highest knowledge was demonstrated for naturalistic intelligence while least knowledge was found in general awareness about MIT.
3. MI preferences did not synchronize with the knowledge of MIT among preschool teachers.
4. Teachers in the experimental group revealed significant change in the knowledge as compared to the control group.
5. Knowledge level of teachers has evidently enhanced from pretest to posttest in treatment group.
6. Variables like age, educational qualification, work experience, marital status, and religion did not affect the total level of knowledge among preschool teachers, while these variables affected the knowledge of intelligences and MI activities.
7. Variables did not contribute to any change in MI preferences of teachers.
8. Preschool children in the experimental group outperformed the children in control group during classroom observations.
9. Bodily kinesthetic intelligence was prominent and naturalistic intelligence was least portrayed among preschool children.
10. Demonstration of MI increased from the first to the fourth observation in treatment group.
11. The activities utilized in the classroom primarily were bodily kinesthetic and linguistic intelligences while musical and naturalistic activities were least utilized in preschool classroom.
12. Overall, females exhibited more intelligence than males but significant difference was found for linguistic intelligence, musical, and interpersonal intelligences. This was supported by the researcher’s qualitative observation, where, except bodily kinesthetic and naturalistic intelligence, females were found to be more intelligent.
LIMITATION
No study is complete in itself and it is bound to have some limitations, which depends on the resources available to the investigator. Therefore, it is important to point out the limitations of the study to know its boundaries:

1. The present study was restricted to four schools of western suburbs of Mumbai.
2. The study was exploratory in nature rather than of generalization of theory.
3. The study was confined to the children of the age group 3-4 years.
4. Video recording was not done while observing children.
5. Sample size for teachers was small.
6. Instead of using time sampling method, qualitative method could be used for observation of the children, which could provide the contextual information

RECOMMENDATIONS
After a thorough analysis of data, the following recommendations are suggested:

1. The study could be conducted in different locations of Mumbai to get more insight into the problem.
2. Observation should be video taped and written qualitatively to get clear picture of preschool children’s multiple intelligences.
3. Parents should be equally involved to acquaint them with their child’s strength.
4. Teachers should be provided training to improve their level of knowledge on current theories.
5. Similar research could be conducted at the primary and secondary level, as these levels require more variety of teaching and learning strategies in the classroom.
6. Authorities of educational institutions could use the findings of the study, as they may provide freedom in the classroom implementation of the curriculum.
7. Preschool teachers should be motivated and promoted as they are not ready for the change to gain knowledge and they want to upgrade themselves.