Problem: Attendance in dance class can often times be extremely inconsistent. I was able to track attendance for dance classes over the course of three weeks in February, as well as interview parents and dancers. I believe the problem of low attendance in class is due to the different times classes are held. As most dancers at this particular studio are in the age range where they are still in elementary, middle, or high school, I believe that makes classes later into the evening more popular as opposed to ones that start closer to the time an average school day ends.

Educated Guess: I would guess that the time of dance class is the cause of inconsistent attendance.

The following is the complete raw data I collected over three weeks. The "Classification" column contains either an "L" to denote low attendance (less than 10 dancers), an "I" to denote an intermediate level of attendance (between 10-14 dancers), and an " $H$ " to denote a high level of attendance ( 15 or more dancers). Classes with an "L" are bolded.

| Class \# | Day | Class Start Time | Number of Dancers | Classification |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Monday, February 5 | 3:30-4:30 | 7 | L |
| 2 |  | 3:30-4:30 | 4 | L |
| 3 |  | 3:30-4:30 | 6 | L |
| 4 |  | 4:30-5:30 | 9 | L |
| 5 |  | 4:30-5:30 | 11 | I |
| 6 |  | 5:30-6:30 | 14 | 1 |
| 7 |  | 6:30-7:30 | 16 | H |
| 8 |  | 7:30-8:30 | 18 | H |
| 9 |  | 3:30-4:30 | 6 | L |
| 10 |  | 3:30-4:30 | 5 | L |
| 11 |  | 3:30-4:30 | 8 | L |
| 12 |  | 4:30-5:30 | 11 | I |
| 13 |  | 5:30-6:30 | 15 | H |
| 14 |  | 5:30-6:30 | 13 | 1 |
| 15 |  | 5:30-6:30 | 17 | H |
| 16 |  | 6:30-7:30 | 21 | H |
| 17 |  | 6:30-7:30 | 19 | H |
| 18 |  | 6:30-7:30 | 15 | H |
| 19 |  | 7:30-8:30 | 14 | I |
| 20 | Tuesday, February 6 | 7:30-8:30 | 7 | L |



| 62 |  | 3:30-4:30 | 3 | L |
| :---: | :---: | :---: | :---: | :---: |
| 63 |  | 3:30-4:30 | 5 | L |
| 64 |  | 4:30-5:30 | 9 | L |
| 65 |  | 4:30-5:30 | 7 | L |
| 66 |  | 5:30-6:30 | 6 | L |
| 67 |  | 6:30-7:30 | 9 | L |
| 68 |  | 6:30-7:30 | 11 | 1 |
| 69 |  | 6:30-7:30 | 7 | L |
| 70 |  | 6:30-7:30 | 18 | H |
| 71 | Wednesday, February 14 | 7:30-8:30 | 8 | L |
| 72 |  | 3:30-4:30 | 7 | L |
| 73 |  | 3:30-4:30 | 9 | L |
| 74 |  | 3:30-4:30 | 6 | L |
| 75 |  | 4:30-5:30 | 7 | L |
| 76 |  | 5:30-6:30 | 14 | 1 |
| 77 |  | 5:30-6:30 | 15 | I |
| 78 |  | 6:30-7:30 | 8 | L |
| 79 |  | 6:30-7:30 | 18 | H |
| 80 |  | 6:30-7:30 | 22 | H |
| 81 |  | 7:30-8:30 | 16 | H |
| 82 | Thursday, February 15 | 7:30-8:30 | 23 | H |
| 83 |  | 3:30-4:30 | 6 | L |
| 84 |  | 3:30-4:30 | 6 | L |
| 85 |  | 3:30-4:30 | 6 | L |
| 86 |  | 4:30-5:30 | 7 | L |
| 87 |  | 4:30-5:30 | 12 | 1 |
| 88 |  | 5:30-6:30 | 13 | 1 |
| 89 |  | 6:30-7:30 | 17 | H |
| 90 |  | 7:30-8:30 | 18 | H |
| 91 |  | 3:30-4:30 | 5 | L |
| 92 | Monday, February 19 | 3:30-4:30 | 4 | L |
| 93 | Tuesday, February 20 | 3:30-4:30 | 6 | L |
| 94 |  | 4:30-5:30 | 8 | L |
| 95 |  | 5:30-6:30 | 16 | H |
| 96 |  | 5:30-6:30 | 12 | 1 |
| 97 |  | 5:30-6:30 | 17 | H |
| 98 |  | 6:30-7:30 | 20 | H |
| 99 |  | 6:30-7:30 | 20 | H |
| 100 |  | 6:30-7:30 | 18 | H |
| 101 |  | 7:30-8:30 | 13 | 1 |
| 102 |  | 7:30-8:30 | 12 | 1 |



The data I collected over the course of the three weeks was then converted into the following checklist where I used the data that fell into the "low attendance" classification and separated it by class time.

|  |  |
| :--- | :--- |
| $3: 30-4: 30$ | Iiiiiiiiiiiiiiiiiiiiiiiiiiiiii (32) |
| $4: 30-5: 30$ | Iiiiiiiiiii (14) |
| $5: 30-6: 30$ | I (1) |
| $6: 30-7: 30$ | Iiiiiiii (9) |
| $7: 30-8: 30$ | Iiii (4) |

This data was converted into the following histogram:



I considered that the time dance classes take place was correlated with classes falling into the classification of low attendance. Therefore, I plotted the following:


This does prove a correlation between classes that have a low amount of attendance and the time of day the classes take place. I created the following control chart:


The process is in control as there are no points outside the limits set by the LCL and UCL. I can conclude that the time of day dance classes take place is in fact the biggest reason for low attendance. To finish this mission, I worked through the 5 w 2 h method in order to reach a recommendation.

Q1. Why do classes with earlier start times typically have lower average attendance?
A1. Because typically dancers are unable to make class by that time.
Q2. Why are dancers unable to attend dance classes at that time?

A2. Because dancers typically fall in an age range where they still attend school, making it difficult to leave school and arrive to the dance studio by said time.

Q3. Why does it take a considerable amount of time for dancers to go from school to dance class?

A3. From interviewing both parents and dancers, pick-up time from school can take a very long time and dancers typically need time to do homework, change, eat, and unwind before dance class.

Q4. Why do dance classes start this early?
A4. In order for the dance studio to hold all of the classes it is capable of teaching without going too late and for really young children with earlier bedtimes to take classes.

Q5. Why not make all early classes for young children and schedule classes for dancers of older age later into the evening?

A5. Because typically dancers will want to take more than one class a day and it is the goal of the studio to have dancers take as many classes as possible. Therefore, scheduling classes for the same age group at the same time will limit the number of classes one individual dancer may take.

H1. How do we increase the level of attendance in dance classes?
AH1. By providing incentive to dancers to take these classes and making classes more readily available.

H2. How do we provide incentive and make classes more readily available?
Answer: By offering classes earlier in the day with a discount and taking advantage of other days of the week to hold classes.

My final recommendation would be to offer classes with an earlier start time at a discount on monthly tuition to provide incentive for dancers to take these classes. Likewise, the studio should take opportunity of other days of the week such as Friday, Saturday, and Sunday to offer classes.

