



Using Quality Control Methods to analyze student-performance fluctuations in educational software

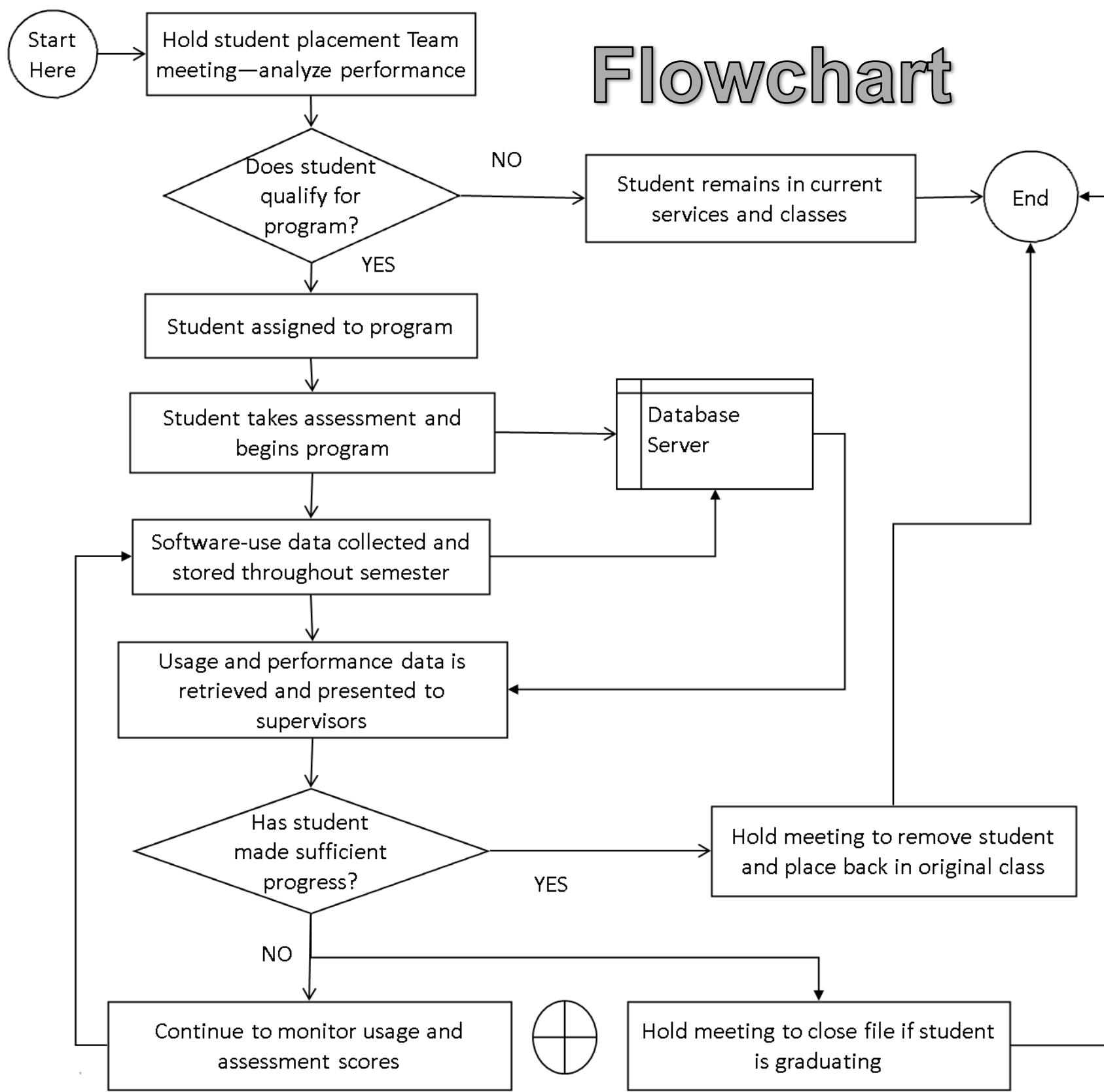
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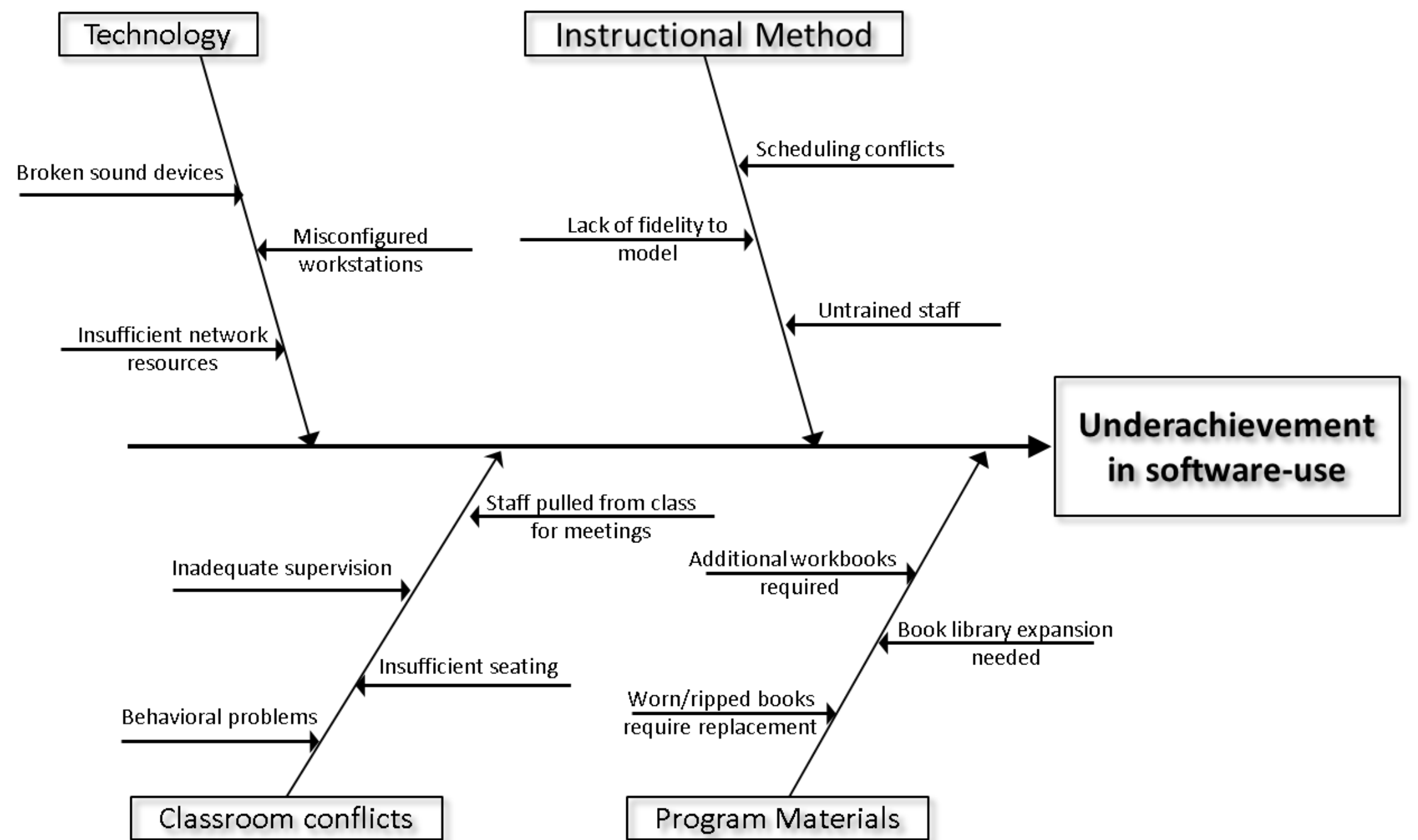
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Abstract

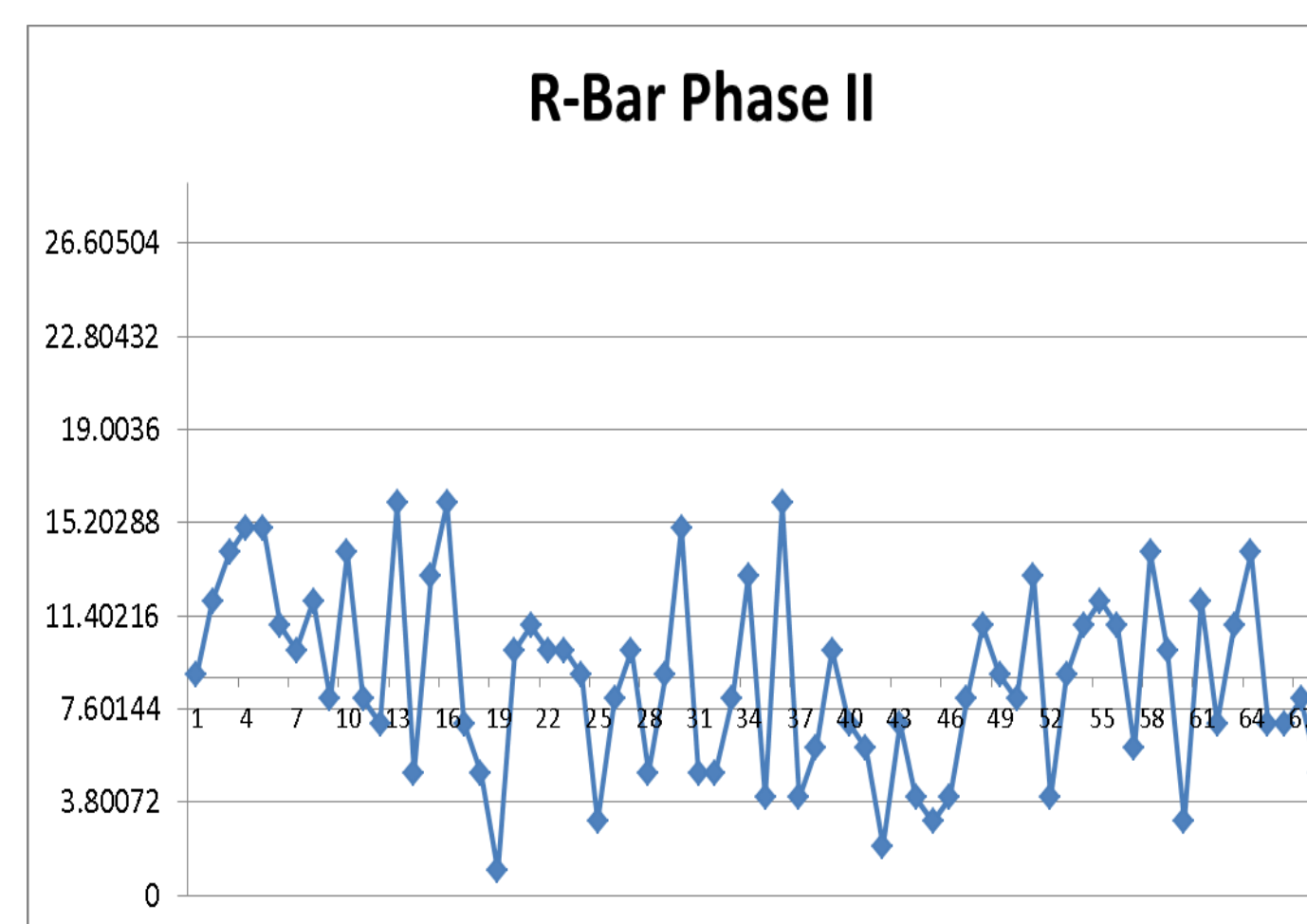
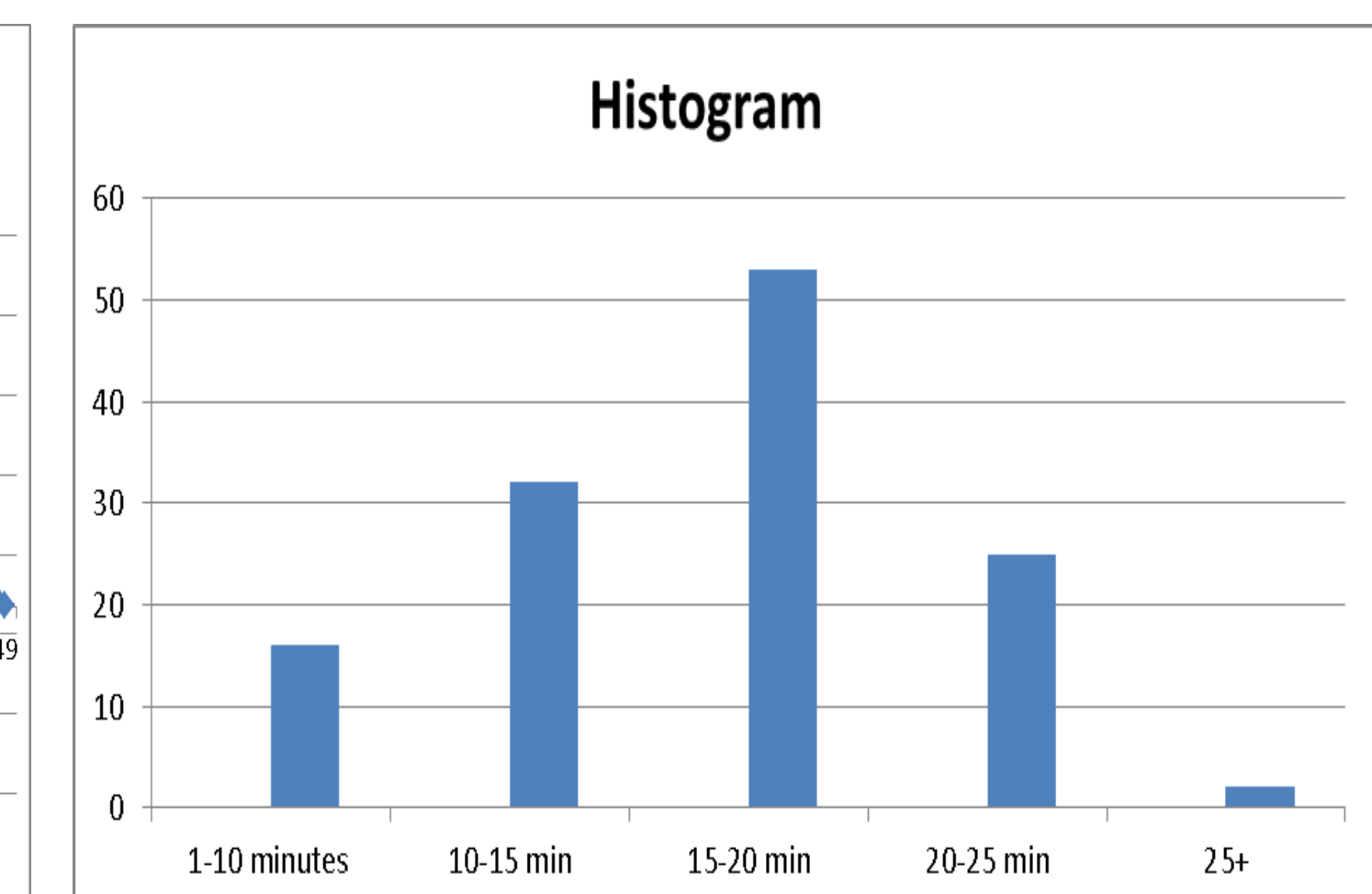
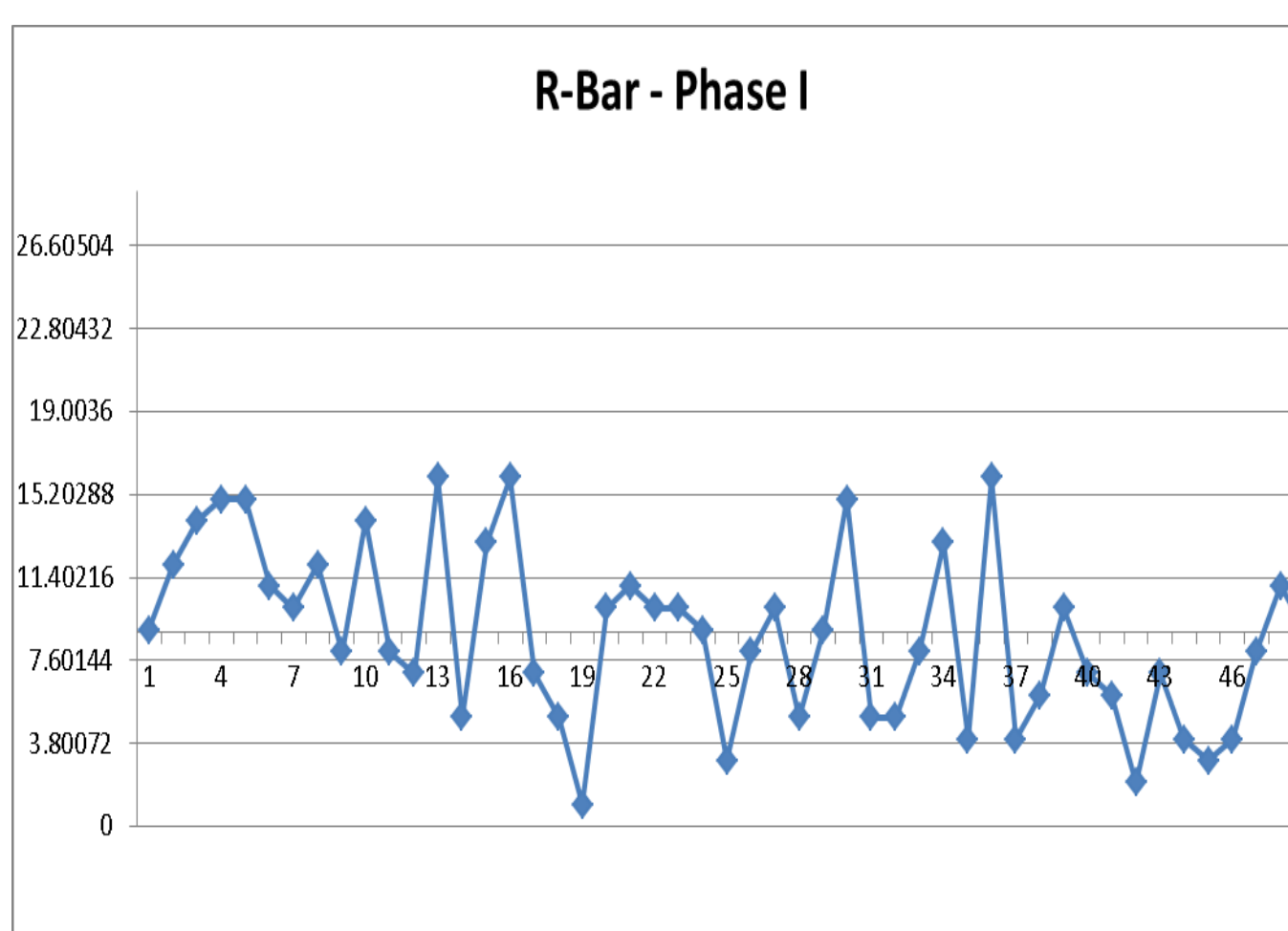
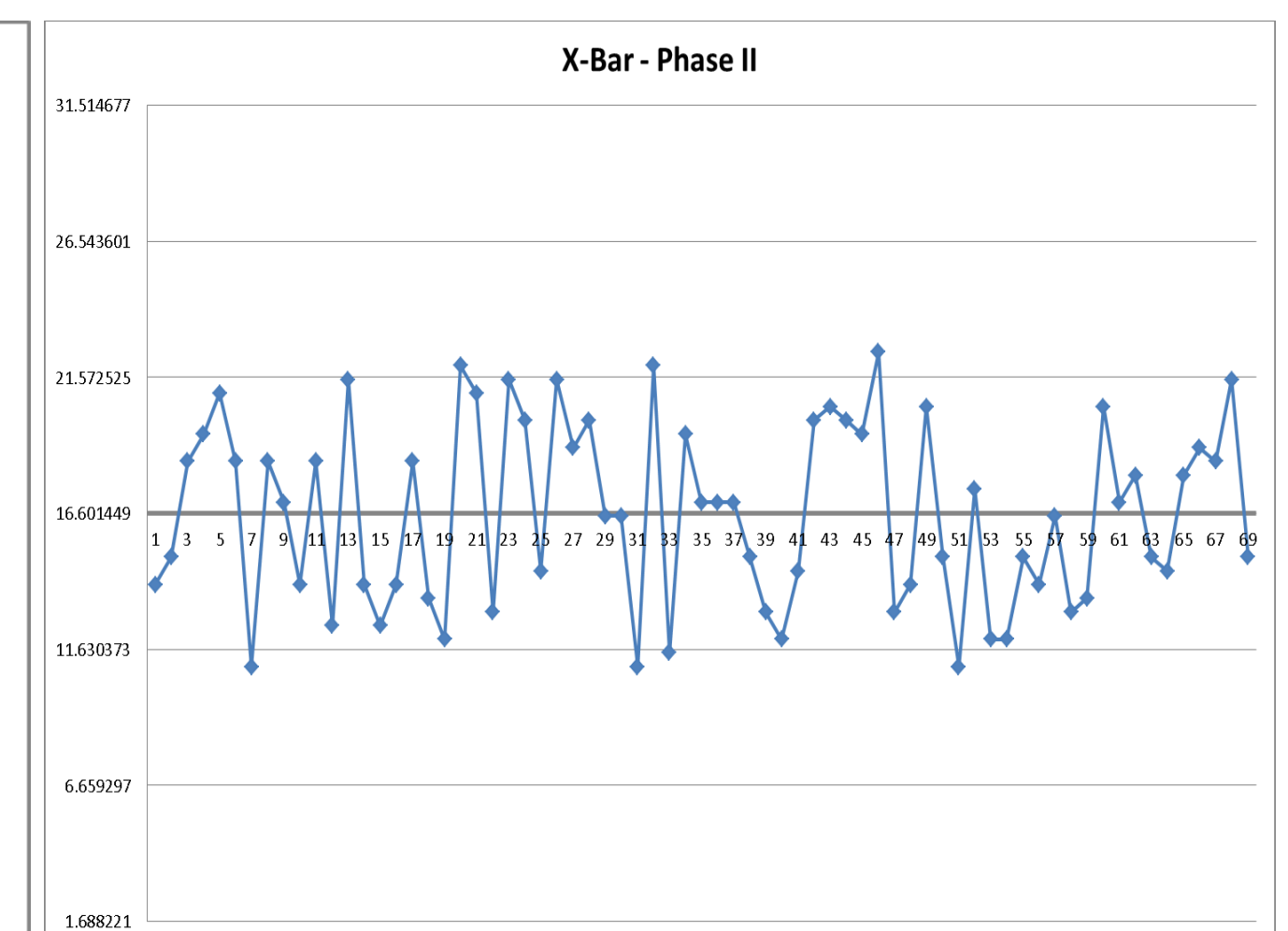
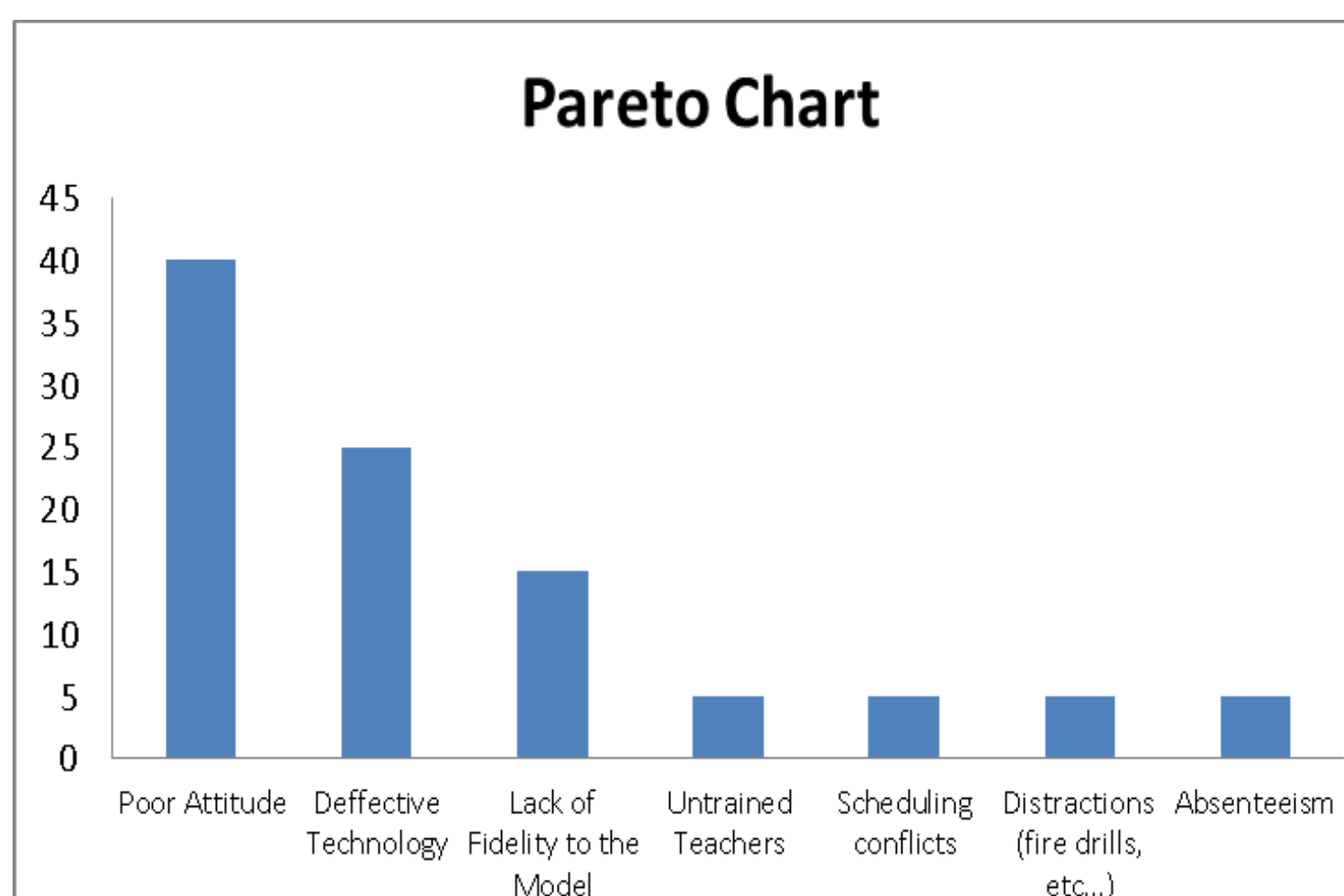
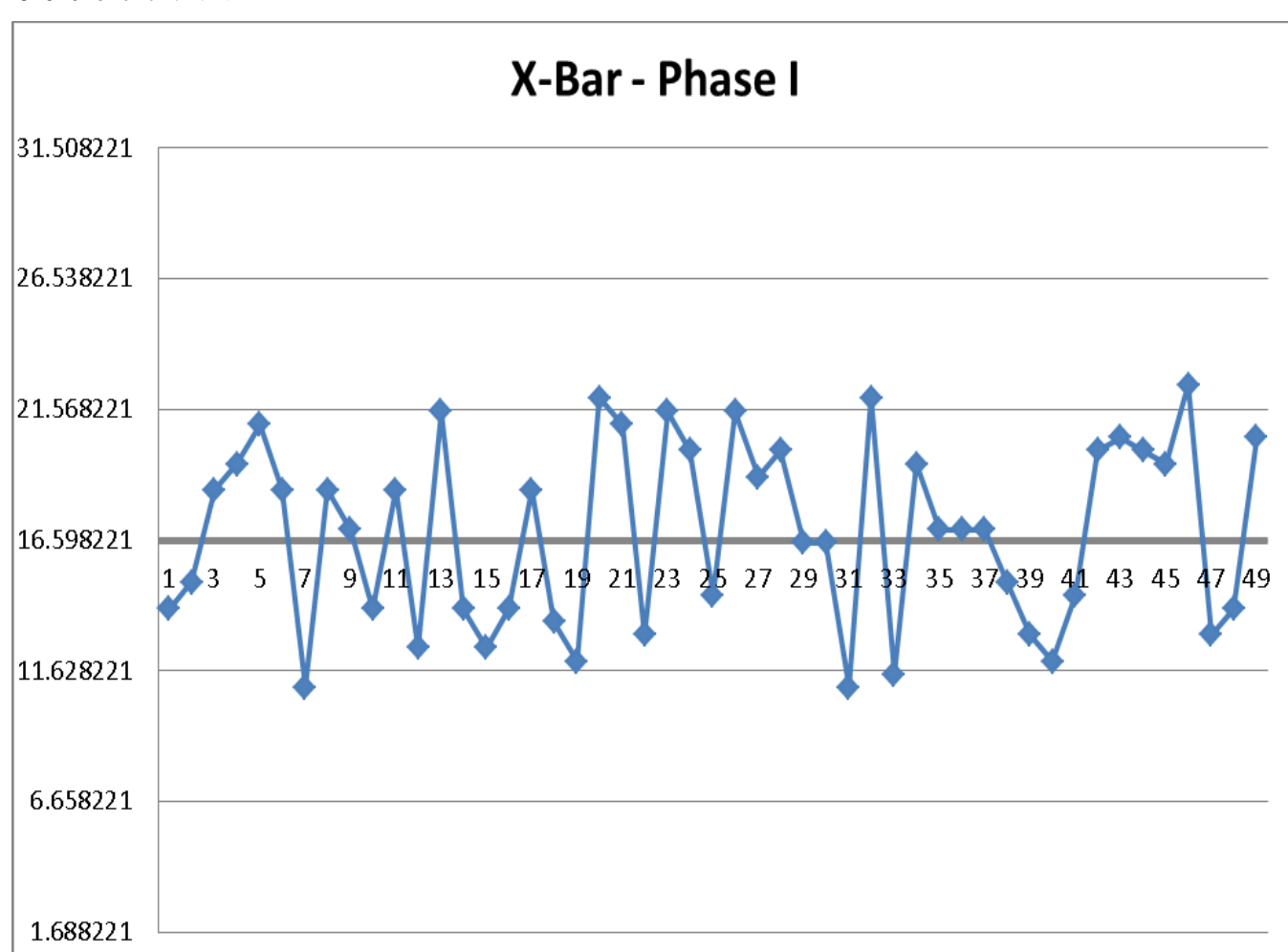
This study analyzes number of minutes students spend on instructional software for reading-intervention. We collect sample data of time students spend using the program and pinpoint areas of weakness. It is important that certain measures are taken to ensure they spend adequate amount of time on the software. We analyze potential weaknesses and apply quality control methods to analyze areas that can lead to improvements in our data set and therefore more consistent minutes counted in time spent on the software.



Ishikawa (Fishbone) Diagram



A flowchart was constructed to illustrate the workflow the students experience on the program. To the right, is the Ishikawa diagram to describe various impediments of the program. The Ishikawa is the heart of our problem scenario because it depicts the relationships of the problems encountered.



Pareto chart data was collected by teachers and ranked according to challenge. Usage minutes was quantified based on raw data to represent where software usage falls by frequency.

Results and Conclusions

Our analysis reveals a detailed look at why student performance varies. While the factors are many, the largest factor in our collection is student-motivation. This deficiency is not easy to rectify or improve because a scientific approach will not help us. A psychological approach is more practical given the nature of the problem. However, other deficiencies we quantified in our Ishikawa diagram can be rectified. For example providing a more conducive environment, (i.e. separate classroom or more durable technology) will warrant immediate resolutions because of the instant effect they have on student behavior.