Assignment 2.1: Solving Research Design Problems by Example

Example 1

A small school district has had several incidents of school bullying among upper elementary school students. There have previously not been any of these kinds of problems as the small community was very close-knit and homogenous in terms of their family values and parenting practices.

The incidents are increasing in frequency and the school administration and community is growing more concerned as these student behaviors are trickling down to younger grades and up to the middle school level.

1. The basic research question is (choose one response):
   a. What is the best approach for identifying and solving the bullying problems?
   b. What factors or variables best describe the bullying problem?
   c. What is the most expedient solution to decrease the bullying incidence and frequency?
   d. What do major stakeholders (students, teachers, administrators, parents, community members) believe is the source of the problem and best solution(s)?

2. The hypothesis(es) to be tested is/are (choose one response):
   a. There are a number of effective programs available. The relative effectiveness of these programs will vary for different students. Some programs will be better than others in terms of their impact on student grades, attendance, behavior, and test scores.
   b. There are a number of variables that could be used to predict student bullying. Those most likely to be present from the literature include: age, gender, grade level, parent’s education level, prior history to disruptive or violent behavior, peer group associations, cultural or ethnic group, and socioeconomic level.
   c. There are a number of possible solutions that could have an immediate impact on reducing bullying at each grade level. School faculty and staff can assist school leadership groups in identifying those solutions likely to work the best in a short period of time. A consensus process can be used to determine the best bullying prevention steps need to be taken.
   d. There are a number of major stakeholder groups as well as individuals who are identified leaders in the school community. Identifying their best ideas for how to handle this problem as quickly as possible will yield the most effective solutions to the problem.

3. The research design and methodology that best addresses the hypnosis(es) is (choose one response):
   a. A Quantitative Design will allow for an evaluation of the various programs selected to solve the bullying problem. This design will also allow for the use of selected demographic and current school performance data and violence incidents for individual
students in the data analysis process. These student data can then be matched with data from similar students to form target groups against which the program effectiveness can be evaluated.

b. A Prediction Model Mixed Methods Design will allow for the collection of data on all the selected variables that will come from various sources (students, teachers, administrators, parents, staff members). Once these data are collected and put into a database for analyses, a number of established statistical analyses can be done on multi-level data to arrive at the best prediction model for determining the largest sources of student bullying behavior and its increase.

c. A Qualitative Design with a Multi-Method source of various types of data (interviews, observations, surveys, videotaping) will capture the critical discussions and how well the problem solving process worked with this large group of stakeholders. These data can be quantified and entered into a database for analyses that narrow the set of bullying prevention actions will be implemented immediately.

d. A Qualitative Study with Subjective Data collection measures (interviews, surveys) will provide the data source for recording individual’s best solution responses from all key stakeholders in the school community. These data will be coded in numerical values and scales for analysis by identified teachers-as-researchers and checked for inter-rater reliability to arrive at solutions from analyses of these qualitative data.

Example 2
A well-established law firm located in the heart of a growing metropolitan area has recently been criticized for raising the cost of its services. These services, although of high quality, are now costing near-by citizens of the community significantly more than similar services by other less-conveniently located law firms.

Old clients are beginning to seek other alternatives and the growth in new clients has dropped off in recent months. The senior members of the firm are not convinced that this downturn will continue but the issue of revenue has reached a serious point where some decisions need to be made soon.

1. The basic research question is (choose one response):

   a. What new business and/or marketing practices will solve our client base drop-off problems?

   b. What client information best describes their reasons for not continuing to use our law firm in preference to other lower-cost firms?

   c. What can be done immediately to address the incidence and frequency of our current client base?

   d. What do senior and junior lawyers within the firm and other loyal clients believe is the source of the problem and best solution(s)?

2. The hypothesis(es) to be tested is/are (choose one response):
a. There are new business practices and solutions being practiced in other law firms that are more successful than the older strategies being used in this law firm. These newer business and marketing practices can significantly increase our retention of old clients and acquisition of new clients.

b. No single factor appears to be responsible for clients leaving in spite of client exit interviews. There is a client database that contains a number of background factors that could contribute to identifying the major reasons they are leaving. This database of client background information includes their income, legal issues, history of services, family size, age, gender, and length of time they have used the firm’s legal services. These are likely to significantly contribute to understanding client departure and lead to strategies to improve what the firm does for its clients and at what costs.

c. There is an immediate need to do something before drastic cost-savings measures will need to be taken. Senior attorneys who helped found the firm understands the issue better than anyone outside the firm. They will be the best source of information for identifying the most effective immediate actions that will need to be taken to avoid further decline in revenue.

d. There are many sources of valid information for deciding what actions are needed. These include all junior and senior attorneys and their assistants, current clients, and other individuals who have shown loyalty to the firm over 3 or more years. These sources will provide the best sources of information for solving the problem quickly before further declines occur.

3. The research design and methodology that best addresses the hypothesis(es) is (choose one response):

a. A Mixed Method Design will allow for an evaluation of the various business and marketing strategies that have proven effective in solving client reduction problems. This design will also allow us to review various sources of information on effective practices and select those that are most relevant and promising to our situation. Once the most effective strategies are identified in the literature, current stakeholders inside and outside the firm can be surveyed to quickly identify those they think are the best choices for immediate implementation.

b. A Prediction Model Mixed Methods Design will allow for the identification of client data on all the selected variables identified as relevant in the existing database. Once these data are selected for further analyses, a number of established statistical analyses can be done on multi-level data to arrive at the best prediction model for determining the largest sources of c.

c. A Qualitative Study with Subjective Data collection measures (interviews, surveys) will provide the data source for recording responses from all senior attorneys identified as the target population. These data will be coded in numerical values and scales for analysis by statistics appropriate to qualitative data.

d. A Qualitative Design with a Multi-Method source of various types of data (interviews, observations, surveys, videotaping) will capture the sources of information that can be
validly gathered from various types of people within and outside the law firm who are willing to respond to particular types of qualitative data collection methods. These data can be quantified and entered into a database for analyses that narrow the set of actions believed to be the best and that can be implemented immediately.

Example 3
Teacher shortages have plagued a large inner-city high school for decades. The problem has recently gotten much worse with an increase in the city’s crime rate. Qualified teachers, even if assigned to the school, often leave within the first year due to a variety of crime-related issues along with serious student discipline problems. School administrators and District administrators are under increasing pressure from the community to improve the quality of the instruction and student achievement outcomes as dropout rates are on the rise. Recruiting efforts at local colleges and universities have not been successful in attracting new and highly experienced teachers and it looks like the state department of education and legislature will have to intervene.

1. The basic research question is (choose one response):
   a. What is the best approach for identifying and solving the qualified teacher retention problems in this inner-city high school that also is located in a high crime neighborhood?

   b. What factors or variables best describe the teacher shortage problem in this particular high school as compared to other similar schools in the city district that may or may not experience high crime rates?

   c. What is the most expedient solution to increase the number of highly qualified teachers who will be hired or transferred to this high school given its high crime rate?

   d. What do major stakeholders (students, teachers, administrators, parents, community members) believe is the source of the qualified teacher retention problem as well as how it relates to high crime at that school and best solutions?

2. The hypothesis(es) to be tested is/are (choose one response):
   a. There are a number of effective strategies being employed in similar schools in this school district and others in the larger metro area. The relative effectiveness of these programs will vary because of differences in school and neighborhood demographics, particularly related to crime rates in the surrounding neighborhoods. Some programs will be better than others in terms of their impact on attracting and retaining highly qualified teachers.

   b. There are a number of variables that could be used to predict the causes of teacher retention in general and the retention of highly qualified teachers in particular. Those most likely to be present from the literature include: teacher’s age, gender, content area expertise, years teaching, highest level of education achieved, school culture and climate, class size, and quality of teaching and learning as measured by student learning outcomes.

   c. There are a number of possible solutions that could have an immediate impact on attracting and retaining highly qualified teachers at this high school. School faculty and staff can assist school leadership groups in identifying a set of agreed upon solutions
likely to work the best in a short period of time. Those teachers with the highest performance as judged by their administrators and peers will be the major source of data.

d. There are a number of major stakeholder groups as well as individuals who are identified leaders in understanding the crime problems in the neighborhood surrounding the school community. Identifying their best ideas for how to recruit new teachers and retain those who are already highly qualified in this context of both student performance and discipline issues as quickly as possible will yield the most effective solutions to the problem.

3. The research design and methodology that best addresses the hypnosis(es) is (choose one response):

a. A Multi-Level Quantitative Design will allow for an evaluation of the various strategies and teacher retention programs that are used in the district and surrounding metro area. This design also allows for the merging of selected demographic, current school and student performance data, and violence incidents for individual teachers and their students. These data can be entered by student, teacher, and school and then analyzed to identify teacher groups that are best retained in their schools as a function of teacher quality.

b. A Prediction Model Mixed Methods Design will allow for the collection of data on all the selected teacher variables that will be collected in multiple schools. Once these data are collected and put into a database for analyses, a number of established statistical analyses can be done on these data within and across all schools in the sample. Results will help identify the best prediction model for determining the most effective teacher retention programs and strategies for teachers of different quality (e.g., low to high).

c. A Qualitative Design with a Multi-Method source of various types of data (telephone and face-to-face interviews, surveys, mall and large group discussions) will capture suggested actions for retaining and attracting more qualified teachers who can contribute to positive changes in student behaviors and learning achievement from all school teachers and for those identified as the most highly qualified in each content area and grade level. These data can be quantified and entered into a database for descriptive analyses that identify the most likely actions for obtaining and retaining quality teachers that can be undertaken immediately.

Example 4
Employees of a local nationally-known non-profit retail thrift store have recently begun demanding more pay for the jobs they do. Although the jobs are varied in terms of skill level and responsibilities, the
employees have organized and approached management to demand a 5% raise in pay despite management’s recent policy change that was announced to all employees that no raises would be coming for a one-year period while economic downsides were forcing some lay-offs and more job responsibilities for retained employees. Morale is at an all-time low and the whole situation has been brought to the attention of the upper management of this company. Local store managers are now under pressure to find a no-cost solution to this problem.

1. The basic research question is (choose one response):
   a. What retail non-profit and charitable thrift store business incentive practices that do not involve pay raises will solve our employee morale and potential employee walk-out problems?
   b. What employee information best describes their reasons for being unhappy with the current job responsibility policies and working conditions, their suggestions for improvements (including incentives and new leadership roles), and compromises they would be willing to accept in lieu of pay increases to get the store back on its feet?
   c. What immediately can be done to address the concerns of employees and reach consensus on a compromise?
   d. What suggestions do acknowledged leaders among the employee groups believe are the best immediate solutions for improving both employee morale and job incentives for taking on more responsibilities with no pay increases?

2. The hypothesis(es) to be tested is/are (choose one response):
   a. There are easy to locate and well proven incentives for similar non-profit thrift store employees that are valued as much or more than pay increases. The policies and practices that are more successful that other strategies based on store qualities known to be effective in the area of incentives versus pay increases will be evaluated. Those incentive practices can significantly increase employee morale, performance, and retention issues will vary in effectiveness, with more employee ownership, leadership, and voice in determining company policies tailored to individual and department needs.
   b. The identification of a suitable incentive to solve employee morale and retention issues can be attributed to no single factor. An employee database exists that contains a number of background factors that could contribute to identifying the important individual differences in employment history, background, and demographic information relevant to the incentive issue. Understanding these employee data will lead to the identification of the most likely to be effective incentive program that can be implemented immediately.
   c. Given that there is an immediate take action before more damaging behavior emerges from the disgruntled employees, a reliable source of immediate data on incentive suggestions can be found in collecting data from the employees themselves. Employees with the highest level of concerns about job responsibilities, company morale, and pay will be the best source of solutions that can be implemented immediately.
   d. The best sources of valid information for deciding what incentives are needed will be those employees who are natural leaders and acknowledged as such by their peers. Those individuals will be identified in a peer nomination process and by store
management. Employees with over 2 or more years with the store will also be included in the leader group. Both these groups will be the best sources of information for solving the problem quickly before further employee job and pay demand problems occur.

3. The research design and methodology that best addresses the hypnosis(es) is (choose one response):

a. A Mixed Method Design will allow for an evaluation of the relevant and effective policies and incentive strategies that have proven effective in solving problems related to employee incentives that are effective in lieu of pay increases. This design also allows for the review effective incentive practices and the selection of those that have the potential to be accepted for immediate implementation. Those identified from a quick review of similar company’s best incentive policies and practices, current employees can be surveyed to identify those incentive programs they could agree to and that are the best choices for immediate implementation.

b. A Prediction Model with Mixed Methods Design will allow for the identification of employee data on all the selected variables identified as relevant in the existing database. Statistical analyses that allow for creating alternative models with multi-level data will be computed to determine the best prediction model for predicting what incentive policies and practices are most likely to be effective.

c. A Qualitative Study with Quantifiable Subjective Data Design will provide for the collection of individual employee suggestions and choices of incentive programs and practices. Data from interviews and surveys will provide the data source for recording concerns and suggested incentives from all employees at this thrift store. These data will be coded in numerical values and scales for analysis by statistics appropriate to qualitative data sources.

d. A Qualitative Design with a Multi-Methods will allow for the analysis of employee incentive program suggestions (from interviews and surveys). Data from these sources of information will be collected from individuals identified by peers and management to be leaders in their departments or store in general. These data will be quantified (put in numerical and scalar formats) and entered into a database for analyses. The analyses will compare the two groups of identified leaders (peer-identified, management-identified) and be used to identify the best incentive program ideas that can be immediately implemented.