Advanced Research Methods Unit 5 Discussion

In designing an experimental research, there are several considerations to be made. First is the number of variables in the experiment, then the level of error tolerance allowed. In my case, the experiment is by a research question on whether autistic children who attend a school based program have better coping skills then that of their counterparts who are homeschooled. We begin by identifying the groups. In this case all the people involved are autistic. Next, we identify the variables of the experiment. For this I am trying to find out the difference in coping skills between the two groups of autistic children, those who attend school based programs and those who do not. Therefore, the number of variables is only the two groups, the group of children in a school setting and those who are homeschooled.

After identifying the number of groups and the number of variables for the trial, we must choose a suitable design to use. There are several designs each suited for a different kind of experimental research. In my case, however, since there are only two groups, I am going to use an experimental design that handles only two variables, the two-group design approach is in my option the best for this situation. However, two-group designs can be randomized or matched. Randomization and matching two groups have different advantages and are suited differently. I choose a randomized two-group experimental design because it will help me minimize errors that come because of the research or the groups.

This design of experimentation involves selecting two groups of autistic children, one from a group of school going children while the other group is home schooled children. I would begin by identifying autistic children and get information, about homeschooling children, as well as pick out the autistic children for the research. In this design, I would use the autistic children that are homeschooled as the control group while those that attend a school based program will be regarded as the experimental group (Alferes, 2012). Because autism is a disorder that is identified by debilitated verbal and non-verbal communication, repetitive and restrictive behavior and difficulty of social interaction with other children all autistic children are initially assumed to display these characteristics (Rodriguez, 2011).

Before starting this experiment, I would test all the children both in the school based program and those in the homeschooled program. This is called pre-test because it happens before the experiment begins. The experimental group would be given everything they need to attend a school like setting. The other group of homeschooled would continue to be homeschooled by their original teacher whether a parent or caregiver. Neither group would receive any special treatment as a result of the experiment. After everything is done I would then do a post-test. This is used to show whether or not my hypothesis was true or false (Alferes, 2012). My case is to test whether autistic children who attend a school based program have better coping skills then that of autistic children who are homeschooled. The results. Maybe biased due to errors. Most common errors would be observer-expectancy and subject expectancy. In the observer-expectancy, the researcher may already have bias and expectation on the way they want the results to be (Mitchell & Jolley, 2013). This can affect the outcome of the experiment and the researcher may draw the wrong conclusions if the results do not favor their earlier assumptions. In the subject- expectancy, on the other hand, the subject knows they are being researched and what a suitable outcome should be. This could cause the children in the school based program to try harder than their counterparts, leading to bad results. In order to avoid this, I feel hidden cameras would be the best option. The only people who would know about the cameras would be teachers and parents or caregivers. I could also employ the use of experimental-blinds, the double blind would be more appropriate because I would not like any of the subjects or myself to be the cause of errors. In a double blind, neither I nor the experimental subjects know to which group they belong to (Mitchell & Jolley, 2013).

Though these methods are usable for this kind of study, they are not best suited because measuring a child’s coping skills in any study would take a very long time to observe. Thus, the best experimental design for this kind of research is within-group design. If the within-group design were to be applied in this study, then the two-level design would be the best because the number of variables is so few. In this design, the subjects can be observed over time. One disadvantage of within-subject design is that as they are observed over time, the subjects may get better because of their practice. This can affect the results because the original data that the researcher started the experiment with gets distorted over time. Distortion of data may also be caused when the subjects get tiered of the practice, and their performance starts to deteriorate. Because patients are subjected to many experiments, an experiment can have effects on the subject, and this may skew the outcome making it hard for the researcher to understand them (Vogt, Gardner, &Haeffele, 2012).

References:

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