

Demystifying Research 5

Surveys, Intervention Studies and Ethical Considerations

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Thought Seed:¹

Traditionally in our country we have been using 'saindha namak' or salt obtained from rocks instead of the sea. Many families switched to sea salt or iodised salt for a variety of reasons particularly in the past 60 years or so. But now studies have shown that 'saindha namak' is rich with essential minerals and contributes to bone health over sea salt. Your family health is in your hands, but your family feels that sea salt could be tastier than 'saindha namak'. If you want to convince your family that there are no major taste differences between these two types of salt, how would you do it and why? Would an uninformed experiment or an informed intervention help you? Is it ethical to experiment on family members? If we shift this to clinical trials of drugs on humans to ascertain the side effects without informing the patients and if you or your family member was one of them, how would you feel? Are there other issues that need attention? Would you feel happy that clinical experimentation was done on humans because it ensures safety for others or would you feel that humans should not be used as guinea pigs? As teachers, do we have the right to make guinea pigs out of our students in order to experiment on them without informed

consent? What gives us the right over other humans like ourselves? Think of how much ethics we need in such contexts by putting yourself in the guinea pigs' shoes.

Research is not a casual task. Writing up a research paper is also not as easy as writing an essay. It must be done methodically, seriously and meticulously. It involves ethical practices as well. As teachers many of us would like to carry out research projects and be able to write them up as articles in journals. Sometimes, we are never sure whether the project we undertake should be a theoretical, practical or an experimental one. In this same column in the last issue, I had written about articles that are theoretical in nature and how it is very seductive and tempting to download a few articles in an area of interest, regardless of whether they are seminal or not, summarise them and send in the collated write ups, with some sort of loose cohesion, which then, as a whole, functions more like an annotated bibliography; we then feel that we have contributed to the field. If we would like to write a theoretical article, we need to be able to critique the existing arguments in the area chosen by us from a standpoint that is uniquely ours which is not available in the literature so far. This is a difficult endeavour for many of us and therefore not something to be undertaken that easily. By

¹ A thought seed is one that is planted in the mind of the reader, left to grow, and fruit when it will. These seeds, unlike tasks, which are often pedagogic, are anthrogonic, (meant for adults) and open-ended; while they present a problem, there is no need to find a clear solution. This notion of a thought seed has been used in the field of language education by Dr. Shree Deepa, who was inspired by the idea of dropping seed balls in a forest for them to germinate at will. (Deepa, Shree. 2022. *Thought seeds in Anthrogonic Learning Contexts*. Journal of Indian Education. Vol.48, Issue No.2. (forthcoming).

contrast, it is probably easier to carry out a practical research project; for that, it is enough to choose an area of interest, collect some data, analyse it and write it up; in this process it is sufficient if we are able to locate and critique the existing literature in the field as part of our literature review. To carry out a practical research study, we either observe students in class, to obtain some information about them, or create a questionnaire, administer it and analyse the results: these two would fall into the area of observational studies. We could also carry out an intervention study. With reference to using a survey questionnaire, most of us stop with that and assume that a survey on attitudes or views about something or the other, analysed and reported is equal to a paper. That is not the case. We need to remember, first of all, that surveys of this nature would never be accepted as a paper in international journals unless the scope of the survey is so large, with a sample size going into thousands, and the topic of the survey is something that has never been investigated before. A questionnaire to a class of students can serve only as preliminary data for a more in-depth study on a topic as a precursor to carrying out an intervention study.

An intervention study presupposes that there is a before-after intervention clause that forms the crux of such a study. For such a study, the initial survey could include a large sample size of a few classes; the focus of the actual study could be to try out a new method, new materials, a strategy, or a new testing method or item type and report the effect of that on some aspect of language proficiency. The initial survey is not 'interventional' but just observational in nature; such surveys remain only that and can only be used to inform the further course of action that we could take. Surveys in order to be meaningful must be conducted in new areas (both

geographical and academic areas) on a large number of people and must be in an area where such a collection of data has not been done earlier. It is also not justifiable to state that 'no one has asked the students in my college about the use of the first language as an asset and therefore it is a question worth asking'. For example, one such argument made often made is that 'my set of tribal or rural students have not ever had a questionnaire administered to them on the usefulness of teaching vocabulary to enhance writing and therefore it is worth exploring'. The effect of vocabulary teaching on writing is an area already researched; as such, at best an intervention study (with data presented as evidence on the nature of growth in writing and the kind of vocabulary used) is necessary to convert it into a research paper.

The usefulness of a questionnaire-based survey for research depends largely on the types of questions that make up the questionnaire and the population size along with the quality of the population and the range it covers. Reporting the statistics obtained from surveys with fancy calculations and statistical jargon will not make it a research paper nor can it become an intervention.

A true intervention study is also termed as an experimental study; such studies are very popular in the sciences and they seem very scientific. For example, to find out which fertiliser is more effective on brinjal plants, an agriculture scientist can take three patches of land and try out his/her experiment and record his/her findings to report the results. Similarly, to find out which antibiotic inhibits the growth of bacteria, it can be carried out as an experimental and comparative study in two petri-dishes. In these kinds of studies, experiments can be done on just one group, or even two or three groups. If there

is a comparison between two or three groups that have seen the same intervention it becomes a comparative study. Sometimes if there are two groups, one group may not be given any intervention (termed usually as the control group) and another group given an intervention (known as the experimental group). The intervention in other words is a sort of experiment that we subject our students to if we carry out such studies on them. The intervention may be in the form of new materials, new methods, new modalities (such as computer assisted language learning etc) that we give our students as an experiment. Very often, we do not inform the students that they are subjected to some experimentation in the name of intervention. Sometimes in order to capture the effect of the intervention we decide to have a control group of students that do not receive the extra materials or the new methods. As easy as it seems and as scientific as it sounds to conduct, collect data, analyse, report and write a paper on this type of study, there are some considerations that we cannot ignore. There are several ethical issues with this type of research. First of all, when we have a control group, is it ethical to deprive them of the methods or materials so that we as researchers gain insights? Secondly, aren't we making guinea pigs out of the experimental group and have we obtained the informed consent of these students? Are they participating in this intervention willingly? Thirdly, if the students are minors, have the guardians/caretakers/parents consented to such an experimentation on the students? More importantly, from the perspective of the validity of the research results, even if the informed consent issues are sorted, if, as the teacher carrying out the research study, we are handling both the groups, are we sure that we are unbiased and not skewed towards a favourite group? Additionally, how reliable will the results be and how generalizable are these results? This

is not to say that intervention or experimental studies should not be done in the area of language education/studies, but we need to be extra careful and practice high levels of ethics during the entire process and with full information and all precautions. It is not easy with human beings as it is with chemicals. Humans do not respond the way chemicals do. Human nature is not as predictable as the nature of magnets, carbon, seedlings etc.

In the area of language education, as language teachers, such an intervention is likely to be related to some aspect of proficiency. For example, we could choose to measure the effect of teaching vocabulary on writing. The oft used item type, 'make sentences of your own, to bring out the meaning of the word, using the following words' can become the basis for a small but valuable research study. All of us know that this is a common item type in most examinations of language proficiency. If we have 5 marks left and a 50 or 100 mark paper to set, it is our 'go to' item type. However, we are also aware that it is very difficult to validate our marking, for along with the suitability of the sentence created by the student to 'bring out the meaning of a word', spelling, grammar and punctuation need to be checked. More importantly, the 'smart alecky' student can make a 'good sentence' by stating, 'it is very difficult to make a sentence with xxx word' and get full marks, while an honest student who tries to actually bring out the meaning of the word may 'struggle' make mistakes and get only half a mark or none. Ideally speaking, for the 'make sentences of your own' item type, each word correctly used should carry at least 5 marks, (to include grammar, spelling, punctuation and appropriacy of the sentence constructed). Alternatively, to use this as the basis for a research paper a formative test paper can carry a few words (as the ones we could use in the

‘make sentences of your own’ item type) that need to be used in a writing task such as an essay question. For example, if the writing task has a descriptive essay, in the vocabulary ‘make sentences’ section we could include adjectives that are tested, which ought to be used in the essay. We could systematically do this over a period of a few months, and then check to see whether the quality of essay writing, with reference to vocabulary use, improves because of our ‘intervention’.² Such an intervention would probably work very well with first generation learners who are struggling with English. Another possible intervention study could be carried out if we decide to use the more enabled language in planning a writing activity and record the improvement/growth in the writing ability of the students. The dependent variable in both contexts is writing ability: the independent variable is either the use of vocabulary or the use of the more enabled language as an ‘asset’ (Deepa and Durairajan, 2022). Similar research projects could be carried out with the use of grammar games to examine better grammatical ability, or the use of constructive feedback on either speaking or writing.

Every one of these research projects, if carried out by the teacher in the classroom, will become action research, which is nothing other than research carried out while teaching and therefore in action. Such studies could be a good combination of both quantitative and qualitative research. As a base level we could use descriptive statistics and compare the scores between the vocabulary section and the writing section, if the focus is on the effect of vocabulary

on writing. It is also possible to carry out a small correlational study for this purpose. However, we cannot establish without doubt that only vocabulary use has enhanced writing ability for statistical correlations do not necessarily capture a cause-effect relationship. To establish such a relationship it is necessary to do a qualitative analysis of the essays written that will triangulate or corroborate or confirm our findings obtained from statistical correlations. For example, counting the number of words, sentences, paragraphs etc will provide some kind of numerical data, but this will not help unless we get corroborative qualitative evidence (the variety of sentences, range of words, types of cohesive devices etc) which would serve as triangulation. Such an investigation would necessarily mean that we carry out an in depth qualitative analysis where we write down and analyse the patterns visible in the types of words used if the study deals with writing ability. We will get to read and learn more about the nature of qualitative studies and the kinds of analysis it entails in a later column.

References

Deepa, Shree and Geetha Durairajan. (2022). ‘Warm welcome or cold shoulder’: Demystifying (‘positively noxious’) English in the multilingual classroom. *Critical Issues in ELT* ed Ruchi Kaushik and A L Khanna. Aakar Books, Delhi.

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² This research idea of using the ‘make sentences of your own’ and linking it with writing capability needs to be attributed to Prof Jacob Tharu.