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The Process of Enhancing Validity, Reliability, and Ethics in Research

Leila Dobakhti

Associate Professor, Faculty of Multimedia, Tabriz Islamic Art University, Tabriz, Iran,
Email: l.dobakhti@tabriziau.ac.ir

Abstract

Many types of research are carried out in the field of ELT. Therefore, different types of studies are performed by post-graduate students, teachers, professors, and researchers. However, the main concern of the present article is that whether the post-graduate students, teachers, and professors have the necessary knowledge on three important research points: validity, reliability, and ethics. To this end, this article discusses these three issues and sheds some light on them. In fact, validity is concerned with the correctness of inferences according to the results and instruments. Meanwhile, reliability deals with the quality and consistency of the data collection procedures. In order to calculate the reliability of the data, Cohen Kappa's inter-rater agreement is presented and explained by means of a vivid example. Finally, ethics is an area of moral philosophy concerning the rules by which behavior needs to be directed. Finally, some means and ways of increasing and enhancing the validity, reliability, and ethics of the research are introduced and elaborated on. By providing comprehensive details and vivid examples, this article can be useful and helpful to post-graduate students, teachers, professors, and researchers in carrying out research and ensuring and quarantining their data, data collection procedures, and instruments.

Keywords: ELT research, validity, reliability, ethics

1. Introduction

The reason that we carry out research is to find out answers to our questions and to study a subject or a topic more deeply. In this regard, we need to make sure that the data we gather from different sources and through different sources are valid, reliable, and ethically correct. If the data collection procedures and the final information that we gather are not trustworthy, consistent and correct, then our results and findings will suffer tremendously. In this paper three important points–validity, reliability, and ethics –are introduced and explained which every research hinges upon them. In a nutshell, validity is concerned with the extent to which the data collection process measures what it is supposed to measure. Therefore, the following four broad points are put forward and delineated under the validity:

– content validity,
– internal validity,
– utility criterion,
– and external validity.

Meanwhile, under the internal validity the following issues are elaborated on:

– triangulation,
– member checks,
– long-term observation at the research site,
– peer examination,
– participatory or collaborative modes of research,
– and researcher's bias.

The second point that impacts our data is the reliability issue. More broadly, reliability is concerned with the consistency and stability of data collection procedures. The following three main factors that can impact the reliability are presented and explained:

– the investigator's position,

– triangulation,

–and audit trial.

Moreover, we can divide the reliability into two broad sections: external reliability and internal reliability. The following topics are introduced and elaborated on under the external reliability:

– the status of the researcher,

– the choice of informants,

– the social situations and conditions,

– the analytic constructs and premises,

– and the methods of data collections analysis.

Furthermore, under the internal reliability the following issues are put forward and delineated:

– the use of low inference descriptors,

– multiple researchers or participant researchers,

– peer examination,

– and mechanically recorded data.

The last point that the present article emphasizes is the ethical issue. By ethics, it is meant that the researchers must follow some codes of behavior which are based on standards, rules and regulations as well as guidance on acceptable practice. Therefore, the following points going to be focused on the ethical issue:

– privacy,

– anonymity,

– confidentiality,

– betrayal,

– and deception.

Finally, two more points concerning the ethical issues are put forward and explained:

– a belief in the value of free scientific inquiry vs. a belief in the dignity of individuals,

– the absolutist vs. relativist positions.

2. Validity

Throughout the study, it is necessary that the researchers take care of validity. The principles underlying any research are based on the fact that validity is a matter of trustworthiness, utility and dependability that the researcher and different stakeholders put into it. As Merriam (1998, p. 202) states, in every research "reality is holistic, multidimensional and ever-changing." Therefore, it is up to the researcher and research participants who should attempt to build validity into the different phases of the research from data collection through to data analysis and interpretation. In the main, validity is concerned with whether our research is believable and true and whether it is evaluating what it is supposed or purports to evaluate. In this regard, Burns (2003, p. 160) stresses that "validity is an essential criterion for evaluating the quality and acceptability of research." Generally, the researchers can use different instruments to collect data. Therefore, the quality of these instruments is very critical because "the conclusions researchers draw are based on the information they obtain using these instruments" (Fraenkel & Wallen 2008, p. 158). Thus, it is imperative that the data and the instruments to be validated. On the whole, the following miscellaneous procedures (i.e., content validity, internal validity, utility criterion and external validity) explain how the instruments and data could be validated in a study.

2.1. Content Validity

Content validity is related to a type of validity in which different elements, skills and behaviors are adequately and effectively measured. To this end, in a study several types of questionnaires (e.g., current students, ex-students and language instructors) and interview questions (e.g., students and instructors) might be reviewed by different types of experts. The experts who review the questionnaires and interview items need to have enough experiences in research methodology as well as teaching experiences at various courses and for undergraduate and graduate students at different English departments for several years. Based on their comments some of the unclear and obscure items might be revised and the complex items could be reworded. Also, according to these experts' revisions, some of the ineffective and nonfunctioning items could be discarded altogether. Furthermore, based on the experts' recommendations all the items might be changed from interrogative format to statement. In addition, the items could be face validated by these experts' recommendations and views. For example, the following are some of the corrections which can be made to the questionnaires:

Table 1

Revision of the Questionnaire

Before Revision	After Revision
- Was needs analysis carried out at the beginning of the course to consider it in order to determining relevant materials & activities? for us.	- Needs analysis was carried out at the beginning of the course in determine the relevant materials
- Do the grammatical rules correspond to your language needs?	- The grammar exercises correspond to my language needs.
- Are there any balance between language forms and language uses? language.	-There is correspondence between language forms and the real use of

2.2. Internal Validity

Mainly, internal validity is concerned with the congruence of the research findings with the reality. Also, it deals with the degree to which the researcher observes and measures what is supposed to be measured. In the main, to boost the internal validity of the data and instruments, the researchers can apply the following six methods recommended by Merriam (1998):

1. triangulation,
2. member checks,
3. long-term observation at the research site,
4. peer examination,
5. participatory or collaborative modes of research
6. and researcher's bias.

1. ***Triangulation.*** In order to strengthen the internal validity of the research data and findings, the researchers can try to collect data through several instruments: questionnaires, interviews, classroom observations and field notes. Gathering data through one technique can be questionable, biased and weak. However, collecting information from a variety of sources and with a variety of techniques can confirm findings. Therefore, if we obtain the same results and data from different sources and via different instruments, we can become sure that the data are valid. Certainly, through triangulation, we could gain qualitative and quantitative data in order to corroborate our findings.
2. ***Member checks.*** Through member checks, the results and interpretations are taken back to the research participants in order to be confirmed and validated. Therefore, in a study the results and interpretations of interviews might be handed over to the interviewees in order to confirm the content of

what they had stated during the interview encounter. In this way, the plausibility and truthfulness of the information are recognized and supported. This procedure is usually one of the most difficult phases of the research. That is, the researcher has to transcribe verbatim all the interviews and write some comments and interpretations about them. Then, he/she can return the verbatim transcripts to the research participants. Finally, another important factor is to reach and access the research participants in order to recheck and confirm the transcripts. Finding language instructors might be easy because they are available at their offices. However, finding students is difficult and time-consuming because they do not have specific places and are spread in different places. But the optimal way is to email the transcripts to them and ask them to confirm their content.

3. ***Long-term observation at the research site.*** Repeated observations over an extended period of time can naturally enhance the internal validity of the research data and findings. In a study it can be tried to attend different levels of classes in order to obtain the intended information. The observation can be continued as long as the saturation point is achieved. That is, the classes, which are being studied, are observed for several sessions in order to obtain the necessary and intended data.
4. ***Peer examination.*** In the peer examination procedure the research data and findings are reviewed and commented on by some nonparticipants in the field. However, these peers need to be familiar with the subject matter under study and possess enough background knowledge on it. Therefore, the researchers can request the experienced teachers, researchers or experts who have necessary background knowledge in research methodology to review and comment on the questionnaires, interview items and classroom observation data and findings. It is certain that the plausibility of the data

analysis and interpretations by these peers can tremendously augment the internal validity of the research.

5. ***Participatory or collaborative modes of research.*** This means that the researchers should try to involve the participants in all the phases of the research. The purpose "is to arrive at evaluation conclusions as a result of a consensus among persons from different perspectives in relation to the program" (Lynch 1996b, p. 62). Clearly, it is difficult for the researchers to perform the study single-handedly. But sharing ideas with different students and instructors could strengthen the research findings and interpretations. Therefore, it can be strived to involve students, language instructors and subject and/or content instructors in the different phases of the research in order to enhance the internal validity of the research. Their varied ideas and views can be tremendously constructive and useful.
6. ***Researcher's bias.*** It is clear that every researcher has his/her own particular values, beliefs and worldviews. The point is that the researchers need to collect, analyze and interpret the data as impartially as possible. The researchers should be explicit, critical and faithful at different phases of the research process. Therefore, the researchers have to try to remain as nonjudgmental and clear as possible throughout the whole research process. It is necessary to stick to the ethical rules and principles, perform the research as accurately as possible and report the findings honestly. The researchers should have adequate knowledge in the research methodology and have enough first-hand teaching experience. Their sole purpose should be to share their experiences and consequently provide suggestions and recommendations for better learning and teaching of languages.

2.3. Utility Criterion

In addition to the above-mentioned six criteria of checking and contributing to the internal validity process, we can add the utility criterion. Lynch (1996b, p. 63) purports that "Utility refers to the degree of usefulness the evaluation findings have for administrators, managers and other stakeholders." This criterion intends to inquire whether or not the research works. That is, the utility criterion asks whether the research endeavor generates enough information for the decision-makers with regard to the effectiveness and appropriateness of the program. Clearly, when the research process provides the different stakeholders with proper and ample information, it can be surmised that the utility criterion has been met and consequently achieved validity requirement. Therefore, the researchers should make sure that their studies' findings would be utilizable and provide enough and efficient information to the decision-makers at different teaching and learning institutes. Consequently, the findings of their researches can be used to probe whether their courses are or are not useful. In this way, based on the results of their studies, the language courses can be modified.

2.4. External Validity

One more issue to be considered is the external validity. External validity is concerned with the applicability of the findings in other settings or with other subjects. As Burns (2003, p. 160) notes, "How generalizable to the other contexts or subjects is our research." In fact, the generalizability might hinge on the underlying similarities between our context and other instructional institutions. Nunan (1999b, p. 17) puts emphasis on the research design and states that "Is the research design such that we can generalize beyond the

subjects under investigation to a wider population?" It is crucial to make sure that our study has the potential of applicability and generalizability to other settings and subjects. For example, suppose that we are carrying out a research on the English for General Purposes (EGP) course which is offered to the new undergraduate students at all the universities throughout Iran. To a great extent, there are many underlying similarities among Iranian universities. Therefore, the findings of our research can be useful and utilizable at other universities in Iran.

3. Reliability

One of the main requirements of any research process is the reliability of the data and findings. In the main, reliability deals with the consistency, dependability and replicability of "the results obtained from a piece of research" (Nunan, 1999b, p. 14). Obtaining the similar results in quantitative research is rather straightforward because our data are in numerical form. That is, the numerical data can be studied and analyzed by any researcher and the results can barely change from one context to another context and from researcher to researcher. However, in qualitative approaches to research achieving the identical results are fairly demanding and difficult. It is because the data are in narrative form and subjective. That is, gleaning the same data from an interview or classroom observation differs drastically from one setting to another and from one researcher to the other one. Even the same researcher might obtain different types of data when he/she wanted to replicate the same research. To this end, Engel and Schutt (2005) point out that instead of obtaining the same results, it is better to think about the dependability and consistency of the data. In this case, the purpose is not to attain the same results rather to agree that based on the data collection processes the findings

and results are consistent and dependable. Merriam (1998, p. 206) believes that "the human instrument can become more reliable through training and practice." In general, the researchers can apply the following three techniques in order to enhance the dependability of the results: the investigator's position, triangulation, and audit trial (Lincoln & Guba, 1985; Merriam, 1998; Engel & Schutt, 2005).

1. ***The investigator's position.*** In order to boost the reliability of the research, the researchers need to explicitly explain the different processes and phases of the research. Therefore, the researchers need to elaborate at length on every aspect of the processes and phases of their researches. They should describe in detail the rationale of the study, the design of the study and the subjects. They should explain in minute detail every phases of the research process. That is, it should be strived to render a thick description of the different processes of data collection, data analysis and interpretations.
2. ***Triangulation.*** The researchers can use different procedures such as questionnaires, interviews, classroom observations and field notes to collect data. Also, the information can be obtained through different sources, such as current students, ex-students, language teachers, subject and/or content teachers, principles, etc. Therefore, collecting the varied and miscellaneous type of information through different sources could enhance the reliability of the data and the results of the study. In this way, the replication of the study could be carried out fairly straightforwardly.
3. ***Audit trial.*** Audit trial refers to the implementation of the different phases of the research: data collection, analysis, interpretation and reporting. In order to fulfill this procedure, the researchers can describe in detail how the data were collected, how they were analyzed, how different themes were derived,

and how the results were obtained. Therefore, this detailed information could help to replicate the research process and contribute to its reliability.

3.1. External Reliability

On the whole, external reliability is concerned with the replication of the study. As Burns (2003, pp. 21-2) states, "Could an independent researcher reproduce the study and obtain results similar to the original study?" Therefore, in order to augment the external reliability of the research, the researchers can apply the below five important procedures (LeCompte & Goetz, 1982; Nunan, 1999b; Engel & Schutt, 2005). These five procedures include the status of the researcher, the choice of informants, the social situations and conditions, the analytic constructs and premises, and the methods of data collection and analysis.

1. ***The status of the researcher.*** This aspect requires that the researcher's social position with regard to the participants of the study to be clarified. For instance, a researcher might be a teacher, student, or anybody in the field of English language teaching. Therefore, because of their familiarity with the setting and people, they can embark on to study any topic and hope to bring about some changes and innovations as far as possible.
2. ***The choice of informants.*** This aspect demands that the researchers describe the participants as fully as possible. In their study they rather carefully and completely elaborate on the participants. The participants or informants of the research might consist of current students, ex-students, language teachers, subject and/or content teachers, etc. The researchers need to describe in detail the characteristics of the participants and the way they are selected. For instance, the researchers can explain that the participants were

selected via stratified random sampling, purposeful sampling, etc. Also, the language teachers and subject and/or content teachers might be selected through purposive sampling based on their teaching experiences.

3. ***The social situations and conditions.*** A study can be carried out in different places and institutes, e.g., language centers, language schools, colleges or universities. It can also be conducted in an academic setting. Therefore, the social situation and condition needs to be fairly constant and uniform for all of the participants. That is, all the participants should have equal opportunities to study and learn the English language. However, it is clear that there are grave differences among the participants from the proficiency, social and economic point of view.
4. ***The analytic constructs and premises.*** The important terms should be presented and defined at the beginning of the study. Also, throughout the study, the main syllabus or curriculum constructs, definitions, units of analysis, and premises should be delineated and their underlying assumptions be elaborated on explicitly. For instance, the main constructs of a study (e.g., objectives, needs analysis, teaching, materials, and testing) should be presented and clarified at the beginning of the research. Therefore, the identification and description of constructs and premises could ease the process of replication and consequently enhance the reliability and dependability of the study.
5. ***Methods of data collection and analysis.*** The different procedures and phases of collecting data should be explicitly explained in a study. The methods of gathering data might consist of questionnaires, interviews, classroom observations, field notes, text analysis, etc. Mainly, the quantitative data are analyzed through descriptive and inferential statistics and qualitative data by means of descriptive and thematic interpretations.

3.2. Internal Reliability

Internal reliability deals with the consistency of collecting, analyzing and interpreting the data. Internal reliability might be obtained when an independent researcher on reanalyzing the information obtains similar findings as the original researcher. Burns (2003, p. 21) asserts that "Would the same results be obtained by other researchers using the same analysis?" In a study, in order to guard against threats to internal reliability, the researchers can use four basic strategies suggested by LeCompte and Goetz (1982) and elaborated on by Nunan (1999b). These strategies include the use of low inference descriptors, multiple researchers or participant researchers, peer examination, and mechanically recorded data.

1. ***Low inference descriptors.*** Low inference descriptors are "easily observable and can be readily quantified (i.e., counted or measured)" (Richards & Schmidt, 2002, p. 239). For example, 'asking factual questions' can be easily counted and measured. On the other hand, high inference descriptors are categories "of behavior which cannot be observed directly but which has to be inferred" (Richards & Schmidt, 2002, p. 239). For instance, it is difficult to observe and measure the students' motivation and interest. In a study, most of the categories of behavior to be observed in the classrooms might be low inference descriptors. For example, a checklist that the researchers use for classroom observation vividly indicates most of the low inference descriptors: use of tasks, use of first or second language, individual/pair/group work, availability of audio-visual aids, practicing note-taking and so on. However, there might be some high inference descriptors which the researchers can explicitly identify and explain in detail. For instance, some of the main curriculum constructs of the study which are high inference descriptors (i.e., objectives and needs analysis) and which could

not be easily observed and measured should be delineated in the study. The elaborate descriptions and explanations can highly contribute to the internal reliability and any independent observer can observe and replicate them rather easily.

2. ***Multiple researchers or participant researchers.*** As Nunan (1999b, p. 60) acknowledges, "In much research this is not feasible, because a research team consisting of several members can be extremely expensive." However, he suggests that the researcher can ask experienced participants or researchers to help him/her in verifying and confirming the data collection, analysis and interpretation processes. Therefore, the researchers can ask other researchers, teachers, and students to help them in the analysis, interpretation and validation of data and conclusions. For instance, the researchers can ask their colleagues or others, who have the necessary background in research methodology and in teaching, to independently rate the already categorized interview data. This can be done in order to measure the reliability of the qualitative data by using *Cohen Kappa's inter-rater agreement* (Taylor & Dionne, 2000).

For example, suppose that some students' and some teachers' interview transcripts are given to other three colleagues. The main researcher can already categorize the data into three parts: Statement of facts, Problems, and Suggestions/Solutions based on the five curriculum constructs: objectives, needs analysis, teaching, materials, and testing. It is expected that the raters to read the transcripts and agree (A) or disagree (D) whether they were Statement of facts, Problems, and Suggestions/Solutions. Therefore, based on the other three colleagues' views, we get the following Table:

Table 2

Sample of the Data Ticked by other Three Colleagues

No	Type of construct	Type of comment	Sample sentence	Agree/ Disagree
1	Time	Statement of fact	EGP course in Iran is limited to only one semester, 3 hours per week …	A
2	Time	Problem	… this is insufficient to the goals of EGP instructors.	A
3	Time	Suggestion/ Solution	… the length of the EGP course should be increased to include the four language skills.	A

Consequently, the answers of these three raters can be collected to calculate the Kappa's value for each rater. The following formula can be used to obtain Cohen Kappa's inter-rater agreement:

$$\text{Kappa} = \frac{(\text{P} - \text{Rated} - \text{P} - \text{Expected})}{(\text{N} - \text{P} - \text{Expected})}$$

where: P-Rated = the number of agreed sentences
P-Expected = 50 % of the sentences expected to be agreed upon
N = the total number of the sentences measured for agreement

The three raters' answers are collected in order to calculate the mean Kappa value. The following procedure delineates the steps taken to obtain the mean value of the reliability of a study's data. For instance, suppose that there are 96 (n=36 current students, n=36 ex-students, n=12 language instructors and n=12 subject/content instructors) students' and instructors' transcripts altogether.

Rater 1	$K = \frac{90 - 48}{96 - 48}$	$K = \frac{42}{48}$	K=0.87
Rater 2	$K = \frac{94 - 48}{96 - 48}$	$K = \frac{46}{48}$	K = 0.95
Rater 3	$K = \frac{88 - 48}{96 - 48}$	$K = \frac{40}{48}$	K = 0.83
Kappa value	$= \frac{0.87 + 0.95 + 0.83}{3}$	$K = \frac{2.65}{3}$	K = 0.88

As the above calculation shows the Kappa value of this study is 0.88 which is a quite perfect agreement of the data reached by the three raters (see Table 3). However, whenever there are some differences in the categorization of the transcripts between the researcher and the raters, it can be solved through discussion and tried to reach a logical and correct agreement. The following table indicates Cohen Kappa's value scales and their interpretations.

Table 3

Cohen Kappa Scale Levels and Their Interpretations

K	Interpretations
< 0	No agreement
0.0 – 0.19	Poor agreement
0.20 – 0.39	Fair agreement
0.40 – 0.59	Moderate agreement
0.60 – 0.79	Substantial agreement
0.80 – 1.00	Almost perfect agreement

3. ***Peer examination.*** Based on LeCompte and Goetz (1982), this method can be implemented through applying and utilizing other researchers' findings. The researcher can use other researchers' results and conclusions in his/her report. Thus, the researcher can try to utilize some relevant studies in his/her research in order to enhance the internal reliability.

4. ***Mechanically recorded data.*** In a study the participants' (e.g., students and instructors) interviews can be recorded and preserved. Therefore, the reanalysis or the replication of the data could be rather easily implemented by any independent researcher. This procedure could increase the internal reliability of the data and findings.

For instance, suppose that based on the pilot study, the internal reliability of the current EGP students' (0.8764), ex-EGP students' (0.8635)

and language instructors'(0.8305) questionnaires are measured through the Cronbach alpha coefficient. Therefore, the data are calculated by the SPSS software program. Theoretically, Cronbach alpha values range between 0.0 and +1.0. It is believed that if the obtained value is close to 1.0, then the item has high value and possesses internal consistency. In a study items holding less than 0.5 can be discarded altogether. However, items ranging around 0.7 can be considered acceptable and consequently retained to be used in the questionnaires. The following tables illustrate the results of the Cronbach alpha coefficient on questionnaires.

Table 4

Current EGP Students' Cronbach Alpha Coefficient

Constructs	Cronbach Alpha Coefficient
A- Objectives	0.8041
B- Needs analysis	0.7590
C- Teaching	
a- attitudes	0.8008
b- time	0.8022
c- students & instructors	0.8176
d- classroom activities	0.8175
e- study skills	0.7830
f- language skills	0.7405
D-Materials	0.8374
a- vocabulary	0.7366
b- grammar	0.8378
E- Testing	0.7221
Total	0.8764

Table 5

Ex-EGP Students' Cronbach Alpha Coefficient

Constructs	Cronbach Alpha Coefficient
A- Objectives	0.7578
B- Needs analysis	0.7272
C- Teaching	
a- attitudes	0.7203
b- time	0.7419
c- students & instructors	0.7691
d- classroom activities	0.7547
e- study skills	0.7552
f- language skills	0.7229
D-Materials	0.7125
a- vocabulary	0.7123
b- grammar	0.7647
E- Testing	0.7507
Total	0.8635

Table 6

Language Instructors' Cronbach Alpha Coefficient

Constructs	Cronbach Alpha Coefficient
A- Objectives	0.7587
B- Needs analysis	0.8251
C- Teaching	
a- attitudes	0.7882
b- time	0.8303
c- students & instructors	0.7724
d- classroom activities	0.8274
e- study skills	0.7863
f- language skills	0.8194
D-Materials	0.7961
a- vocabulary	0.7672
b- grammar	0.8099
E- Testing	0.8571
Total	0.8305

3.3. Ethical Issues

Generally, in the field of research, ethics can be defined as being sensitive to the rights of others. Therefore, the researchers need to take heed of the ethical issues at any stage of the research process. That is, it is necessary to consider ethical issues from the planning stage through data collection to data analysis to reporting the findings. As Flick (2006, p. 49) contends, "You will be confronted with ethical issues at every step of research." In this regard, Burns (2003, p. 70) points out that "Ethical considerations are an important part of any research."

The main issue for the researcher is to protect the rights and interests of the participants. However, research ethics is somehow a complicated issue and we can hardly "find easy and very general solutions to the problems and dilemmas" (Flick, 2006, p. 52). Fraenkel and Wallen (2008, p. 56) point out that "The term ethics refers to questions of right and wrong." On the whole, it can be inferred that to a large extent ethics is a matter of agreement among the researchers.

When carrying out a study, the researchers need to observe several essential issues. In this regard, Cohen and Manion (1994) mention some of these issues: privacy, anonymity, confidentiality, betrayal and deception. Privacy can be described as the private and personal life of people as opposed to their public life. Therefore, it is essential not to violate the private life of the respondents "through publication or other means of dissemination" (Merriam, 1998, p. 217).

The personal information that the informants provide is sometimes sensitive and might be threatening. Thus, it is needed to observe the privacy of the information and not allow the respondents to be identified. To this end, the anonymity of the participants is very important. That is, it is necessary not to

reveal the identity of the respondents during and after the research process. Thus, for example, we can refer to the interviewees by numbers and the researchers should not require the respondents to write their names in the questionnaires. Therefore, the respondents can remain anonymous and their provided information does not reveal their identity.

Also, the researchers need to "guarantee participants' complete confidentiality" (Flick, 2006, p. 49). That is, the respondents should "be assured that any data collected from or about them will be held in confidence" (Fraenkel & Wallen, 2008, p. 59). Another more important issue is the *betrayal*. This term refers to occasions in which the confidential information disclosed by the participants is made public. Therefore, the publication or dissemination of information may harm the participants and consequently embarrass them. Thus, the researchers should try to abstain from betraying the respondents. The final dilemma that Cohen and Manion (1994) mention is *deception*. Deception in research means that some researchers intentionally do not tell the whole truth to the participants. Some researchers conceal the true nature of the research and do not explain to the subjects the whole truth. These researchers try to obtain information or expose the informants to situations in which the subjects do not know the real objectives of the research.

In quantitative approaches to research there is hardly any ethical contention because the data are in aggregate and numerical form (Merriam, 1998). However, in qualitative approaches, there are many ethical controversies because these approaches directly deal with human beings, their opinions and behaviors. The degree of ethical problems is much more acute and tense in social, psychological and medical sciences than in the field of English Language Teaching (ELT). In the field of ELT, ethical problems may arise out of carelessness, negligence and the like. On the whole, the ethical

issues may result from the nature of the problem under study and the methods that are used to investigate them. Each stage in the research has its own potential set of problems. For instance, in writing a research report we might come to a conclusion which "If your participants read these results, they may find it embarrassing to be compared with other people" (Flick, 2006, p. 50).

Generally, there are many sources of tension in research. Cohen and Manion (1994, p. 360) mention two sets of these sources: "First, a belief in the value of free scientific inquiry versus a belief in the dignity of individuals, second, the absolutist versus relativist positions." On the one hand, researchers try to obtain more information and data, on the other hand, there is the issue of individuals' rights which should not be disregarded or violated. Also, there is the absolutists' camp which contends that there should be some set principles and rules which should guide the researchers in their research. However, the relativists hold that the ethical issues might arise during the research process and no set guidelines can determine what to do and what not to do.

Meanwhile, the data collection phase has its own dilemmas. For instance, participant observation is criticized because of "the questionable ethics of deceiving the other participants" (Merriam, 1998, p. 100). That is, the privacy of the participants is threatened or they may disclose some information which they might regret it later. Also, some researchers might prefer the use of covert observation in order to reduce the effect of the observer in the classroom. However, Flick (2006 p. 219) believes that "this is highly problematic with respect to research ethics." Also, when collecting data in the interview encounter, the researchers should not ask questions which might hurt the respondents. The researchers should not try to argue with the subjects because his/her task "is first and foremost to gather data, not change people" (Patton, 1990, p. 254). Moreover, the topics to be interviewed should not induce pain or

bad memories on the part of the interviewees. Furthermore, the interviewers should not invade the interviewees' privacy nor should they coerce or persuade the respondents to reveal information that they do not intend to do so. In general, in conducting a study, the researchers need to consider the participants' rights as follows:

- The participants are free to choose to participate voluntarily in the research.
- The participants are informed that they could refuse to participate or withdraw from participation at any time without providing any reason.
- The participants' anonymity is considered.
- Participants, especially students, are not required to participate in the research as a classroom project.
- The participants are not asked or directed to furnish the desired type of information.

In the main, as a researcher, the researchers have some responsibilities which are necessary to observe during and even after the conduct of the study which are as follows:

- The researcher ensures the confidentiality of the data.
- The researcher should not deceive or betray the participants.
- The researcher should obtain the informed consents of the participants.
- The researcher should explain the purpose of conducting research to the informants.
- The researcher should honestly present a complete account of the research process.
- All the subjects should be treated equally.
- The researcher should think about the consequences of the study before conducting it.

- The results of the study should not harm or hurt participants and other stakeholders.
- The possible biases should be controlled and contained as far as possible.
- The researcher should respect the subjects and consider their needs and interests.

Therefore, it is necessary for the researchers to obtain the informed consent of the participants before starting the data collection procedure. Flick (2006, p. 46) defines informed consent as "the study's participants have agreed to partake on the basis of information given to them by the researchers." Therefore, the participants decide whether to participate in the study based on their own choices. Thus, the researchers completely explain to the students and teachers the procedures, possible risks and benefits of the research.

Some ethical codes or principles have been developed in order to organize and regulate the researchers' behaviors and make them aware of their responsibilities toward the participants and their profession. Merriam (1998, p. 219) is of the opinion that "Professional codes and federal regulations deal with issues common to all social science research." In this regard, Flick (2006, p. 45) points out that "Codes of ethics are formulated to regulate the relations of researchers to the people and field they intend to study." To this end, Burns (2003, p. 71) presents three criteria for the ethical conduct of a research: "responsibility, confidentiality and negotiation." Therefore, the researchers need to take responsibility for every single stage of the research, take into account the confidentiality of the obtained data, and negotiate every aspect of the research with the participants and the intended parties. In general, the six-fold benefits of the *codes of practice* are as follows:

- It creates a sense of membership community for the researcher.

- It makes the researcher aware of his/her responsibilities to his/her participants and the field.
- It makes the researcher to find other alternative and ethical ways of conducting the same research.
- It makes the researcher to prepare and organize himself/herself in any research situation.
- It prepares the researcher to face any unpredicted and unknown conditions.
- It creates a sense of disciplined behavior among the researchers.

Certainly, we can barely pinpoint what is ethical and what is unethical, what is correct or what is incorrect research behavior. However, any research process should "produce some positive and identifiable benefits rather than simply be carried out for its own sake" (Murphy & Dingwall, 2001, p. 339). Nevertheless, those benefits should not be obtained at the cost of deceiving, harming and disregarding participants' rights.

4. Conclusion

On the whole, validity can be described as the extent to which our data measures what it purports to measure. For example, if our data claims to be about reading comprehension, then it must be about reading comprehension rather than vocabulary. Therefore, researchers need to utilize data that exactly makes use of variables in the study precisely as they are operationalized. In fact, the validity of the findings of a research hinges upon the suitability of the instruments or items used to estimate the variables. No matter how meticulous a researcher has been in using a research design and applying appropriate statistical procedures if the measurement is questionable, the findings and results can be inadequate. Therefore, validity is related to the degree to which

the results of the procedure aid the applications for which they are needed. Hence, validity is related to the results of the measurement not to the measurement itself. Moreover, it is a matter of degree. There is no absolute validity rather there are high, moderate, and low validity. Finally, validity can be affected by the characteristics of the participants from whom we gather data. For instance, different cultural groups provide different answers. Consequently, our results are affected by the very nature of that specific cultural group or community. Therefore, the researchers need to be cautious about the background of the participants. For instance, we need to take care of the cultural, ethnic, social, economic, and political differences of our participants.

As was discussed, another important issue in the research process is the reliability of the data and findings. Reliability is related to the dependability, consistency, and replicability of the findings and results. It is believed that similar results can be straightforwardly obtained in quantitative approaches. It is because the data appear through figures and numbers. Nevertheless, obtaining identical results in qualitative research is difficult and challenging. It is due to the subjective and narrative form of the research and our samples are human beings rather than statistics. For instance, collecting data from interviews and classroom observations can differ from one researcher to another researcher and from one context to another context. If, for example, the same researcher wanted to gather data, each time he/she would garner different information because it is subjective. For this reason, it is required that instead of gathering the same data, we need to focus on the consistency and dependability of the data. More importantly, we can make our instruments more reliable by means of practice and training. Therefore, we can increase reliability for collecting data during observations and interviews. Another way

of increasing reliability is through lengthening the data collection means by adding more items.

In a study, researchers need to make every effort to consider the participants' rights. Before collecting the data, it is essential to obtain the informed consent of the participants (students, teachers, etc.). Also, before administering the questionnaires or conducting the interviews, the respondents' consents should be obtained. That is, the researchers should explain and describe every minute aspect of the research to the participants and ensure the confidentiality of the obtained information. Meanwhile, the interviewees and the informants' identities should not be revealed. To this end, the researchers need to use numbers instead of participants' names. Also, all the participants should be treated equally during the research process. Furthermore, it is necessary that to collect and analyze the data without any personal biases. It should also be endeavored not to guide or change the participants' views or answers based on the researchers' own intentions or goals. Every effort should be made to control and contain personal biases and remain impartial and faithful to the research ethics.

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