Ergonomics Research Techniques

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Week 7: Lec 25- General Analysis Methods

Focus group

Hello everyone. Last time what we discussed was the general method that we normally take up for cognitive analysis right. So, we discussed about interview, we discussed about content analysis. Today we are going to discuss about the focus group. So, what exactly this particular method is and how do we take up this type of tool for our study and what are the benefits of this particular type of tool or techniques ok.

So, let us first understand the little bit history and you know type of this particular method. So, it is very simple way for evaluating any kind of software or any other products that we normally develop and try to get information that how the users or end users are thinking about that product ok. So, it may start for the initial stage in the initial stage like you know if you want to understand the understand about a particular product at the initial stage before intervention or at the end also when you have developed a new product. When you have developed a new method or a new intervention then also you can take up this tool for the for evaluation ok. So, normally as its nomenclature says that it is a focus group right. So, it is a group of people to whom we are going to interview it. Its process is quite similar to the interview process whereas, in the interview process we talk in person, person to person right. There is one person from whom we collect

information whereas, in case of focus group it is a group of people. So, that that you know changes the method and all of course, the result and the context where we actually go for focus group. So, focus group is a carefully planned group discussion ok. It is not that all of a sudden we thought of doing it and whoever is available let us sit and do the study. It is not like that. It is a very much planned group discussion and you have to design it or you have to prepare this one for a for a period or you have to prepare the setup and then only you can have this type of data collection ok. Of course, here the person who is going to get involved in the focus group they should be interested. Here it is very important to have some kind of you know informed consent. For all those cases especially for interview, observation, content analysis whatever we are doing we need to understand that whenever we are collecting data or collecting information from a human ok. So, taking consent to participate in that study is very important. So, for almost all cases wherever ergonomics data collections are involved you have to take care this particular format that is the you have to you have to brief the protocol to the participant to the subject we call them participant, we call them subject or you know the people who are actually participating in your study. So, everybody should be aware what is the motto of this particular method or why you are collecting data, how they are information will have you know you will maintain the secrecy of that information like you know you cannot make it public individual information it is not right. So, ethically it is not correct. So, you have to take care of this type of all ethical issues and once they are convinced that yes this particular type of information or this particular type of information or this participating in this type of discussion is not going to harm or they are willing to do that then only they can participate. So, a form where all these things are mentioned in a particular format then they can sign in that form and you can keep it as a in evidence as an evidence that yes they have consented for this information. So, for any individual human experiment you should have this signed informed consent. Also one thing everyone should remember for this once someone is going to participate in your study it is not that you are going to force them that if you join you have to continue for this many days, this many hours or this many studies it is not right. So, it may happen that in between there are possibilities for some reason for uncertain reason they may withdraw themselves. You should allow them to do so ok. You cannot force them to participate in your study. You can request however, it is not mandatory. So, that point also should be available in the signed informed consent form ok. Then they are very much comfortable and it is not that why they are withdrawing themselves. They should be. It is mandatory for them to you know explain. For any reason they can withdraw themselves from this study and you have to accept that and in some cases that is why number of samples keeps on changing from one experiment to other experiment ok. So, that that that is the that happens and you have to accept that fact ok. It is not only for focus group for any kind of human experiment wherever you are collecting data this is mandatory.

Focus groups

- O'Donnell et al. (1991) elaborated:
  - It is consist of 8-12 members with a leader or moderator.
  - Members are a sample of customers or end users.
  - It is organized into relatively homogeneous group.
  - These are more likely to produce the desired exchange of information between members rather than a flow of information from individual members to the leader.

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So, again coming back to focus group study, in 1991 professor Odenell was a professor he elaborated that it consists of 8 to 12 members. This focus group study when we are talking about focus group it is important to understand how many members will be there in this particular study right. So, is it 3 members or 4 members how many members. So, he explained or he elaborated in detail and he mentioned that the number of people can vary from 8 to 12 members and of course, the mediator the person who will be asking questions and who will be leading the whole discussion will be from the research group ok. Members are a sample of the customer or the end user of course, as I mentioned in the very beginning it is organized into relatively homogeneous group. So, the group has to be maintained ok. From in terms of socio economic background, in terms of education background and many other aspects it has to be very much homogeneous. If it is not homogeneous the perspectives are different ok. Perspective towards a particular product particular concept definitely it varies. So, whenever you are collecting information or you are conducting such focus group study the group has to be homogeneous in nature. These are more likely to produce the desired exchange of information of course, between members rather than a flow of information from individual member to the leader. It is like it is an exchange. So, it is not that always a person from the participant is telling something to the leader or to the researcher, it is not like that. The information can flow from one member of focus group to other member that way we gather information ok. So, this is very much. So, how do we conduct this focus group study? It is very much experienced with of course, initially we can train the researchers. However, it it absolutely depend that how how we are actually conducting the study. So, depending on the conduction method, conducting how we are starting the discussion and how are we are moderating the discussion   depending on that the information or quality of

information will change. So, it is very much skilled based job or you need real experience to conduct focus group study.

Focus groups

- A scenario is postulated sequence of events- a story.
- With regard to product design, a scenario refers to the sequence of events that outline a person's interaction with a particular product.
- People in every age, in every place and in every society have used stories to consider and communicate their experience.
- Specifically they are asked to use these scenarios to illustrate what is good and bad about existing products that are directly or indirectly related to a prototype product.
- The interviewees are then asked to use these scenarios as a context within which to evaluate the prototype product.

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So, when we do this what we do? We postulate a scenario or a story normally with regard to product design. So, the product that you are going to evaluate or that the concept that you are going to or you are trying to understand. So, you have to build a story upon it ok. The scenario refers to the sequence of event that outline a person's interaction with a particular product. So, it if you are conducting or you are trying to understand about a mobile it has to be the all things the scenarios will be related to the mobile phone. If it is related to a website, the the scenario has to be the the story that that you are trying to build in the beginning of your discussion that has to be related to that particular website. So, people in every age in every place and in every society have used stories to consider and communicate their experience. So, that is allowed ok. Specifically they are asked to use these scenarios to illustrate what is good and what is bad about the existing product and that are directly and indirectly related to the prototype product. So, similar product line will be there and then from there. So, here product does not mean the typically tangible product, product can be a service, product similar service, product can be a website many other things ok. So, product means the ultimate design. So, the interviews are taken are then asked to use this scenario as a context within which to evaluate that particular prototyped product. So, that way we can do the focus group study.

Focus groups

- This procedure is useful in that it encourages interviewees to consider how they actually use existing products and that these products are not ideal.
- This procedure restricts the scope of the evolution task, which might enhance the interviewee's ability to complete the undertaking.
- The idea that constraints might enhance such tasks seems paradoxical given the widely held belief that such activity requires as few restraints as possible.

So, this procedure is useful in in that it encourages the interviews to consider how they actually use existing product and that these products are not really ideal ok. So, this procedure restricts the scope of the evaluation task which might enhance the interviews ability to complete the undertaking. So, very very important thought over here. The idea of the constraints might enhance such task scheme paradoxical given the widely held belief that such activity requires as few restraint as possible ok.

Focus groups

- Finally, the scenario-based procedure provides the interviewees with a naturalistic communication tool.
- Scenarios seems to allow people from different backgrounds to discuss products by providing a common and perhaps neutral sense-making mechanism.

So, finally, what happens when the scenario based procedure provides the interviews with a naturalistic communication tool. So, there is a scenario and they are actually discussing about a scenario and scenarios seems to allow people from different

background to discuss that particular product by providing a common and perhaps natural sense making mechanism. So, it becomes very easy everyone every member of the focus group can relate themselves with that particular scenario. So, then it becomes very easy for them to understand to give the feedback on this particular aspect ok. So, here building that story building that scenario is very very important. So, it is not that you know at one day I suddenly realize I have to conduct a focus group study and by chance I have say I have the homogeneous group available with me and I start doing my focus group study it is not. You really need to postulate the whole thing beforehand you have to keep everything ready and then only you can conduct this particular study.
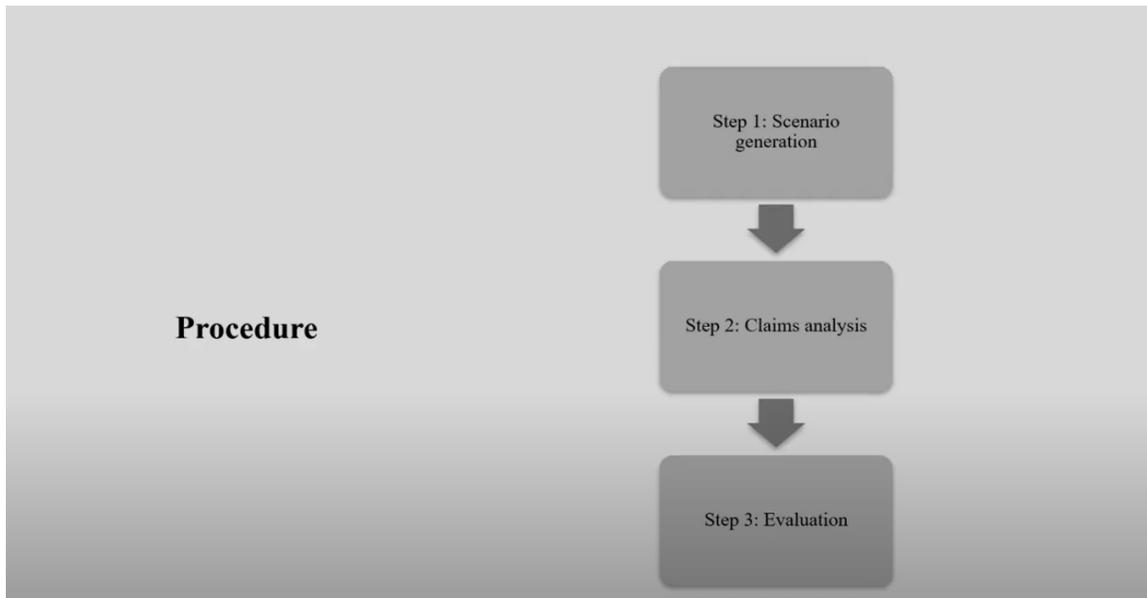
So, let us go by the step by step procedure which is very important earlier also we did the similar thing for other tool. First is scenario generation, second is you analyze those claims whatever is coming out and then you evaluate the situation.

Procedure

- **Step 1: Scenario generation**
  - Ask interviewees to develop a set of usage scenarios to exemplify distinctive and typical usage situations for an existing product that are related (directly or indirectly) to the product that is to be evaluated.
  - The scenarios could be illustrated using the task steps approach or through storyboards or through role play.
  - Each approach leads the group to focus on different aspects of their interactions with the products, and each approach encourages attention to different product characteristics.

So, when we are talking about scenario generation what it is, what it says. So, as the interview is to develop a set of uses scenario to exemplify the distinctive and typical uses situation   for an existing product that are related to the product that is going to be evaluated. So, if you want to evaluate a particular pain what you have to do is you have to ask the interviews to create or to understand or design a scenario where similar type of products   are being used and the group members are somehow used that particular product used have some experience to towards that product and all. So, thus interviews, interviewee who is going   to take. So, they has to develop this particular part. The scenario could be illustrated using the task step approach step by step. So, if you want to use pain. So, how do we use it? If you want to use mobile phone how do what are the steps? So, using mobile phone if you want to message someone. So, what are the steps to be followed or through a story board of course, it is a very common practice and maybe it is possible to role play. Now, the last component are quite rare mostly we go by the you know story board type or giving the steps of the procedure how do we use that particular product. So, each approach   lead the leads the group to focus on different aspect of that interaction. So, someone may be interested when we are talking about the use of a phone someone may be interested in the opening the cap, someone may be while writing, someone how the grip is. The interaction points will change depending on the users interest. So, with that particular product and each approach encourages attention to different product characteristics very important. So, from here only we will get to know about these characteristics.

Procedure

- **Step 2: Claims analysis**
  - Ask the interviewees to identify the features of these products that they consider significant.
  - One approach to performing this activity is to use large sheets of paper on which the group will write a title to define a particular feature.
  - Having written this feature on the top of the sheet, the group then generates comments about the feature
  - For each comment, ask the participants to determine whether it is good and desirable or whether it is bad or undesirable.
  - It might be useful to divide the paper into two columns headed "positive" and "negative".

Now, once we have that so, of course, here very important we can have the recordings. So, that we can use them later also we can do it on the spot ok. But as we have a video recording facility audio recording facilities normally we practice to record them ok. So, what how do we do this claim analysis? So, as the interview is to identify the features of these products that they consider very much significant. So, it is absolutely on the participants ok. So, they are the owner of the whole study here ok. So, we ask them that what are the significant considerations they have ok. So, one approach of performing the this particular activity is to use large sheet of paper on which the group will write a title to define a particular feature. So, those information later we can use it. So, that is also possible also we can have the recording. So, having written this particular type of features on the top of the sheet the group then generates comments about this particular feature. So, one person write about one particular feature, another about another feature. So, we will have maybe 4-5 features of a single product from different group members right. So, it may happen that kind of feature which the designer himself or herself may not thought of. However, it can come up from the focus group discussion because the participants or end users are open to think ok. So, here is the beauty of this particular tool. So, for each comment ask the participant to determine whether it is good or desirable or whether it is bad or undesirable. So, you just take opinion on the on the on those particular concept ok. It might be useful to divide the paper into two columns, maybe positive and negative or you can have common and then later you can understand or you depending on the type of information that you have received you can segregate them ok. Based on this segregation you have varieties of feature. So, you know at the end that what you need to take what you need to discard. So, that type of thing can generate after this analysis.

Procedure

- **Step 3: Evaluations**
  - Introduce the interviewees to alternative product concepts.
  - These concepts might be the result of design team activities or might arise from previous focus group.
  - Ask the group to rescript their scenarios, replacing the existing product with the new product and evaluate how it features would emphasize or deemphasize the pros and cons identified earlier.

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And in the evaluation phase so, you introduce the interviews with the alternative concept. So, you have all the earlier concept earlier products. Now, you have your own the new one whichever you have generated ok. So, now, you introduce that and these concept might be the result of design team activities or might arise from the previous focus group. It is absolutely depend like you know you conducted one focus group earlier and you have some information from there you developed a particular product and now you are going to again test it with the other group other focus group. And then you try to take view that how differ it is or how improved. It is normally definitely we always try to improve our product right. So, any features any features which are positive in nature we try to incorporate and the features which are negative in nature we try to remove them. So, whichever are positive so, we must have incorporated in the new design and we are going to test it that this is being accepted by the this particular focus group member of the focus group or not. So, ask the group member to rescript their scenarios. They have developed their own scenarios earlier with the earlier products. Now, let us let them rescript it with the current product ok. So, replacing the existing product with the new product and evaluate how it features would emphasize or de-emphasize whatever ok. So, depending on the what product it is what feature it is the pros and cons whatever they have identified earlier. So, what will happen at the end you will have a comparison that what was there and what was new, what was good, what was bad ok. Have you is it was it like you know could you remove that bad information or bad or negative things from the new concept or you have in have you introduced something good into that new concept. So, you will get more clarification on these points.

So, what are the advantages? So, group interviews allow the researchers to survey a large number of opinion quickly. So, you know it is a it is a group right it is it is a group of 8 to 12 members. So, if you have a large group you understand it really represent that particular user group. So, within a very short period of time you have a very quick view that how do you collect that particular information ok. How how good your product is. So, group interviews can also overcome two of the problems associated with individual interviews that you know normally it happens that when you are doing one to one interviews it is not possible. So, you take lot of time here at one go you get several information within short span of time. However, there are disadvantages it is not always. So, people will definitely always go for focus group. It is not like that depending on the context depending on the product depending on the type of evaluation you are looking for you have to choose you should go for the personal interview or you should go for the focus group. It is not that always it is advantages, there are some disadvantage to this particular tool as well.

Disadvantages

- The analysis of the data derived from group interviews can be time consuming.

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So, what is disadvantage? The analysis of the data derived from the group interviews can be time consuming very much ok because if you have n number of information. So, if you are looking for a focus group discussion and the discussion must have continued for 20-25 minutes it is a it is it is a it is a large data set right. So, you have you should have enough time or enough skill to segregate those data segregate those information and you you get the data. So, these are some disadvantage whereas, in case of interviews you have very specific if you if you have a structured questionnaire you know what you are going to get out of this particular interview even if you spend 20 minutes time for a particular structured interview, at the end you know what are the data is coming right. You have already method to extract that, but here it it becomes little difficult in some cases when the you know group is big and number of points discussed is more then in those cases it is little difficult ok.

Let us take some example. Now, here again I ask every participant over here that do this particular study or you you practice this at home you know using a particular product you must have developed earlier or just an example you know you you take. So, previous version and the new version you take and you do the study and then you continue ok. So, you you practice that how it is possible. So, if you do not get 8 to 12 members maybe you can practice for 4, 5 members. However, it is advised that you go for the 8 to 12 members ok. Now, let us take the example. So, example of electronic wallet intended to replace the traditional wallet ok. So, this this particular. So, we we have designed that particular electronic wallet whereas, we are trying to replace the traditional wallet. So, the objective of the following case study was to evaluate a particular electronic wallet prototype. So, we know how the traditional wallet works ok. So, we we have varieties of traditional wallet whereas, we have designed an electronic wallet. So, 4 individual groups of 6 interviewees were asked to develop the scenario exemplifying how they currently use the wallet ok traditional wallet and the electronic banking products like ATM and internet banking product. So, they they have been asked to develop such scenarios. Here 4 focus group ok. So, number of people in each group I have not mentioned here, but group number of groups were 4. So, these the the the the interviewees were given pens pencil paper and instructed to illustrate their usage scenario. Maybe if required the illustrations maybe they can draw or they can write you know using their pen and paper the scenarios they can have their storyboard they can describe it is in a step by step process or something like that ok.

Example

- The participants were then asked to identify "feature" of these situations that they considered significant.
- The participants were then asked to elaborate both what is good or desirable (the pros) and what is bad or undesirable (the cons) about these features as a group
- They were introduced to an electronic wallet prototype and instructed to evaluate how the features of the new technology would emphasize or deemphasize the pros and cons identified earlier.
- Two of features- storage and access- that were identified by the participants.

So, the participants were then asked to identify features of these situation that they considered very significant. So, here it is very important that the owner of the scenarios are the participant. They can play with it or they really want to they are going to give you the information how they are the scenarios are which portion of the scenario is very important which one. So, when we are talking about the uses of wallet know how do we keep money, how do we take out money, how do we keep the notes all these things varieties of information. They are the only owner will give the information about it ok. So, the participants were then asked to elaborate both what is good and desirable in that particular case like pros and what is bad and undesirable about those features that they have identified in that particular group is clear. So, they were introduced to an electronic wallet prototype. So, once this is done they will be introduced with an electronic prototype and instructed to evaluate how the features of the new technology would emphasize or de-emphasize the pros and cons identified earlier. So, they have that traditional wallet experience and there they have identified all the pros and cons. Now, they have introduced with the new technology and new product that is the electronic wallet and then they can compare and they explain they are being explained that how you are going to use that electronic product. Now, they are being asked that how the what are the pros and cons they developed in earlier in traditional is matching to this new product. If it is exactly match then you know it is like something you need to really work on. However, it is expected in the new design number of pros has been increased and cons has been reduced it is expected ok. So, depending on the type of product the percentage will change. So, two of the features you know storage and access here in this particular example was discussed and that were identified by the participants. So, in this particular example they discussed about only storage and access of the wallet, not the other features ok. So, here they have identified pros and cons about the storage and

access on the traditional wallet and the electronic wallet. So, then definitely they have compared it and they have come out with the result.

Related methods • The focus group's closest relative is the individual interview.

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Now, if we talk about the related method. So, focus groups the closest is the individual interview as I mentioned earlier also that in individual interview you get information from a single person whereas, in the focus group you get information from the from group of people right. So, in that case it becomes very easy for you to have common understanding common data. So, this is very very useful tool in the field of design ok. So, when we really develop new product we go for this type of tool very fast you know it is we gather information very fast ok. So, and it is testing your prototype also becomes much easier if you go for this type of method ok.

Reliability & Validity

- The lack of standardization that it implies inevitably raises concerns about reliability
- Biases are difficult to rule out.

So, reliability and validity the lack of standardization that it implies inevitably you know raises the concern about reliability. So, as I mentioned earlier also you know it is a very much skilled base how do you really collect those information. So, how do you able to scrutinize them, it is it is very much you know depending on that and of course, biasness you know it is if the person the who is the researcher are already biased and then you know the prompt the way they should look for the product to the participant then it become the data becomes little biased in nature. So, these are some difficulties that we have for this type of tool. However, for a preliminary result definitely we can take up this type of this particular tool. And of course, here I would like to mention that you know it is not you know it is not a guideline that if I am going to design a product and I want to evaluate it I should go for focus group or I should go for interview. It is absolutely depend what objective you have drawn for your study. So, based on the objective only you can decide which method is suitable for you ok. It can it may happen you can have better result in the content analysis ok. So, it is not mandatory that you go for focus group or you go for interview or observation ok it is not mandatory.

Tools needed

- The focus group requires only a few pens, pencils, drawing pads, and a tape recorder to note what was said..

So, what do you need for this type of study what tool you need? The focus group requires only few pen pencils because you know you collect information from them and of course, some papers it is always better we have a recording system audio recording or video recording then latter also what you can do you can analyze the data and you can get better information ok.

Summary

- Focus group are designated to elicit reactions from participants about a particular topic and to generate ideas and concepts that will help the client understand the subject area under study.

In summary we can say focus group are two can say focus group are designated to elicit the reactions from participants about a particular topic. It is very important only a particular topic ok and to generate ideas and concept that will help the client to

understand the subject area which is under study. Now here focus group study it is not always towards end of your research. Focus group study you can conduct at the beginning to understand the market, to understand the existing product, also you can use the same method the that particular focus group study to evaluate your own new designed prototype ok. So, both the cases it is possible. Similarly interviews also you can do even content analysis ok. In content analysis also what you can do once you have the new system new method ready or new process ready or new product ready you can test it through content analysis. Then how the whole process has been reduced what are the benefits available for your new product that is also possible. So, all these method starting from observation, content analysis, interview, interview study and focus group study you can use at any point of time of your whole research. However, it is advised that we start with these types of method initial at the initial stage. So, that we can have a broad elaboration broad view of the context ok that we are going to research upon ok. So, that is why we can start with them of course, we can use them at the end of the research as well. Thank you for today and we will start more about the task analysis from the next class. Thank you. .