A Content Validation of Focus Group Discussions Based on Need Analysis in a Physical Education Training Module for Primary School Teachers

Una validación del contenido de las discusiones de grupos focales basada en el análisis de necesidades en un módulo de formación en educación física para profesores de escuela primaria

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Abstract. Background: The prevalence of qualitative research methods in educational studies has prompted ongoing discussions regarding their validity and the appropriateness of employed methodologies, processes, and data. This study contributes to this debate by meticulously developing and validating an interview guide for Focus Group Discussions (FGD). The guide aims to determine physical education teachers' module training requirements for preparing Learning and Facilitation Activity (PdPc). Methods: Through a comprehensive process involving five key steps—establishing research objectives, topic and question selection, guide development, expert assessment, and pilot FGD interview—content validity of the FGD interview guide was systematically evaluated using development and validation techniques. Results: Qualitative researchers and physical education lecturers assessed the FGD guide, resulting in a Content Validity Index (CVI) 1.00. Expert recommendations led to refining one of four questions, ensuring clarity and relevance. Based on the pilot FGD results, the FGD guide was further improved, now featuring six main questions and probes that elicit thorough participant responses through strategic probing. Conclusion: Based on the pilot FGD results, the researchers modified the question phrases and structure. The latest FGD guide has six main questions and probes. Probing with more questions elicited more thorough responses from participants. The latest FGD guide has six main questions and probes. We also explore the originality, limits, and advantages of the FGD as an emerging method for gathering qualitative data from physical education teachers involved in PdPc. Practical Implication: This study enhances the FGD method for gathering qualitative data from physical education teachers involved in PdPc and delves into its originality, limits, and advantages. Moreover, the research carries practical implications for curriculum design, policy formation, teacher training, resource allocation, and community involveme

Keywords: focus group discussion, content validity index, physical education, education.

Resumen. Antecedentes: La prevalencia de métodos de investigación cualitativos en los estudios educativos ha provocado debates continuos sobre su validez y la idoneidad de las metodologías, procesos y datos empleados. Este estudio contribuye a este debate desarrollando y validando meticulosamente una guía de entrevistas para debates de grupos focales (DGF). La guía tiene como objetivo determinar los requisitos de formación modular de profesores de educación física para la preparación de la Actividad de Facilitación y Aprendizaje (PdPc). Métodos: A través de un proceso integral que involucra cinco pasos clave (establecimiento de objetivos de investigación, selección de temas y preguntas, desarrollo de guías, evaluación de expertos y entrevista piloto de DGF), se evaluó sistemáticamente la validez del contenido de la guía de entrevista de DGF utilizando técnicas de desarrollo y validación. Resultados: Investigadores cualitativos y profesores de educación física evaluaron la guía DGF, arrojando un Índice de Validez de Contenido (IVC) de 1,00. Las recomendaciones de los expertos llevaron a perfeccionar una de cuatro preguntas, garantizando claridad y relevancia. Sobre la base de los resultados piloto del DGF, se mejoró aún más la guía del DGF, que ahora incluye seis preguntas y sondeos principales que provocan respuestas exhaustivas de los participantes a través de sondeos estratégicos. Conclusión: Con base en los resultados piloto del DGF, los investigadores modificaron las frases y la estructura de las preguntas. La última guía DGF tiene seis preguntas y sondeos principales. El sondeo con más preguntas provocó respuestas más exhaustivas de los participantes. La última guía DGF tiene seis preguntas y sondeos principales. También exploramos la originalidad, los límites y las ventajas del DGF como método emergente para recopilar datos cualitativos de profesores de educación física involucrados en PdPc. Implicación práctica: este estudio mejora el método DGF para recopilar datos cualitativos de profesores de educación física involucrados en PdPc y profundiza en su originalidad, límites y ventajas. Además, la investigación tiene implicaciones prácticas para el diseño curricular, la formulación de políticas, la formación de docentes, la asignación de recursos y la participación comunitaria, en consonancia con el logro de los objetivos del gobierno para el siglo XXI.

Palabras clave: discusión en grupo focal, índice de validez de contenido, educación física, educación.

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Introduction

Qualitative research methods in physical education studies have grown in popularity in recent years, as seen by the growing number of scholarly works on the topic (Sim & 2019). Qualitative research analyses Waterfield, experiences and interpretations (Powell & Bodur, 2019). Akyurek (2021) describes it as qualitative and narrative. Qualitative research in physical education helps academics to study issues that quantitative methods may not (Leisterer & Jekauc, 2019). Asking, listening, learning from others and including their responses in feedback is the only way to learn about oneself and others (Rijo et al., 2020). Qualitative methods collect respondents' viewpoints and deepen relevant knowledge (Rijo et al., 2020; Sim & Waterfield, 2019). Qualitative research is appropriate since it emphasises personal experiences (Queirós et al., 2017).

Qualitative data gathering includes interviews, observations, and document analysis (Edwards & Holland, 2020). In physical education research, interviews are commonly utilized to explore teachers' experiences (Fröberg & Lundvall, 2022). Another approach within qualitative research is Focus Group Discussion (FGD), which offers the advantage of interviewing multiple individuals efficiently (Andacao & Linganay, 2021). These diverse methods collectively underscore the significance of qualitative research in providing valuable insights into personal experiences and perspectives, thereby enriching our comprehension of physical education.

FGDs are organised talks to gather opinions on a specific issue in a safe environment (Krueger & Casey, 2000). FGD exposes "public" rather than "private" opinions (Saunders et al., 2018). This technique may be appealing to participants, especially those from communities where they

are often excluded from choices that affect them. Focus groups work when the moderator is skilled, and the participants are knowledgeable, interested, and can provide input (Pushkarenko et al., 2023). The involvement of the participants is consistent with the topic and objects (Stahl et al., 2009). A small group discusses an issue of interest in a group interview (Barrows, 2000). FGDs are an essential research tool in physical education with various benefits. Focus groups, for example, may generate clear ideas and dialogues and give more data than surveys on the complexity of thoughts and behaviour (Varga-Atkins et al., 2017). FGDs typically give detailed narratives not seen elsewhere. They can only happen when the members are relaxed and the group moderator is prepared (Sim & Waterfield, 2019).

FGDs, like any other method, may have drawbacks, such as the quality of the data collected. To avoid this issue, the present researchers developed and validated the FGD interview guide to assure its suitability for study aims. According to Merriam & Tisdell (2016), an interview guide is a list of topics or basic questions the interviewer can explore and go into with the interview subject. Wang et al. (2021) said that interviews examine people's experiences with this technique. An interview guide helps the interviewer organise and complete interviews while still asking the same vital questions (Richey & Klein, 2007). Qualitative validity and reliability include dependability, precision, and perfection (Shawer, 2017). Both improve transparency and reduce researcher bias in qualitative research (Kiger & Varpio, 2020). Appropriateness" refers to the methodologies, procedures, and data employed in qualitative research.

Validity evaluates the technique used to answer the research question, the design's suitability for the approach, the sampling and data processing, and the findings' validity for the sample and context (Sim & Waterfield, 2019). Lawshe's method, first published in 1975 (Lawshe, 1975), has been widely used to establish and quantify content validity in many fields, including market research, organisational development, health care, and education. To obtain the most representative collection of item material and relevant content, Oudat (2021) defines content validity as the degree to which one may generalise from a single collection to all potential items in a broader area of components.

Qualitative researchers may need help with validity due to the heterogeneity of methods in the field, the importance of criteria to the research topic, and the importance of the entire research process (Hutzler et al., 2019). Qualitative studies need validity, trustworthiness, and reliability, according to experts. This research aimed to describe the development and content validation of an FGD interview guide to determine the criteria for building a practical module for physical education teachers during teaching and learning sessions. Guided by the Discrepancy Model (1987) acts as a backup model in building questions to determine physical education teachers' module training requirements

in preparing Learning and Facilitation Activity (PdPc). The discrepancy Model (1987) is often used in education (McKillip 2011). In developing questions to know the needs of teachers, the focus is on setting goals for the needs of the developed product and determining what needs to be implemented. The second procedure is performance measurement, which requires setting results. The third step is to detect the discrepancy identification that should occur and what the actual problem is.

Methodology

Study Design

The FGD interview guide used in this research was content validated to see if the questions were inclusive and adequately represented teachers' needs, usage, and perception of the Physical Education Teaching Module based on the Discrepancy Model (1987). The creation and content validation of the FGD guide were two essential steps in this research (Guest et al., 2017).

FGD Guide Development and Content Validation

Based on field knowledge and a literature review, a semi-structured FGD interview guide was produced. The flexible technique enables respondents to disclose more information than other methods. This interview could be more rigorous and open, but it could elicit more information from respondents (Adhabi & Anozie, 2017). In their research, Bores-García et al. (2020); Guest et al. (2017) informed that FGD focuses more on problems, issues, needs, and factors and can be generated in each context, yielding more specific items than individual interviews. López Secanell (2023) discovered that focus groups provided more study information, whereas interviews provided more in-depth participant perspectives. Stroebel et al. (2019) discovered similar interview and focus group data patterns, and was created using Figure 1's five steps.

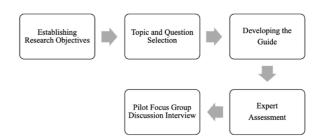


Figure 1. FGD Interview Guide Development Steps

Step 1: Establishing Research Objectives

This research aims to: (a) identify training module needs among primary school Physical education teachers.

Step 2:Topic and Question Selection

Research questions were carefully designed, considering the existing literature and the areas of interest

the investigators had decided to explore. The Sequential Iterative Model (SIM Model) was mainly used to formulate the interview questions. This method is based on several designs, with five critical components required in many training sessions. These five aspects each have a specific purpose and are interconnected. In the design, there are first goals and objectives, then keywords containing training material, training flow, training aids, and training assessment. Furthermore, the interview questions were

carefully chosen to address the research topics adequately. In developing the interview questions, time constraints, the requirement to minimise learning effects during the interview, and the necessity to carefully create follow-up prompts to maximise the utility of replies. At the same time, minimising measurement noise to the maximum degree feasible was taken into account. Four questions were developed based on the SIM Training Model, as shown in Table 1.

Original Focus Group Discussion (FGD) Questions

No	Aspects	Questions	
1.	Objective	How do teachers assess knowledge and skills in Physical Education subjects?	
2.	Content	What challenges do teachers often face in planning and implementing Physical Education subject activities? a. Based on content standards/ learning standards, which topics are the most difficult to implement?	
3.	Strategy	How do teachers face the challenge?	
4.	Activity	What do teachers need in a guidebook related to Physical Education?	

Step 3: Developing the Guide

The FGD interview guide was separated into five components. The following components are included:

- 1. A welcome comment outlining the research, discussion objective, confidentiality, and fundamental rules.
- 2. The moderator, assistant, and group members are introduced in a warm-up session.
- The interview questions included an introduction, a guide, and a conclusion. The purpose was to choose things typical of a larger domain, giving general insight into the performance or qualities of these items.
- 4. A researcher's conclusion to bring the discussion to a close.
- 5. There are four draft questions in this study.

Step 4: Expert Assessment

Three content validation experts from various fields, such as Physical Education experts and qualitative research experts, were appointed to evaluate the validity of the content of the FGD guidelines in terms of appropriateness, clarity, and comprehension of the interview questions. The selection of experts is based on work experience and research. The letter of invitation and an expert appointment were submitted via email. It contained information related to the purpose and objectives of the study, as well as the expert evaluation form of the FGD interview guidelines developed by the researcher. Expert assessors were requested to rate each question (including follow-up questions) in the guidelines using three response options: "good," "moderate," "weak," and "not suitable" on an evaluation form. In addition, expert evaluators are given space to provide feedback or propose additional questions.

Step 5: Pilot Focus Group Discussion Interview

The pilot research used the exact location, interview procedure, and participant selection criteria as the main study. A pilot study was carried out to ensure that the interview questions were appropriate to the objectives and research questions, in addition to training the researcher to understand the FGD process better and get used to taking

discussion notes and using assistive instruments such as voice recorders.

Five randomly chosen new Physical Education teachers participated in a trial FGD a week before data collection. Google Meet hosts FGDs. Werang & Leba (2022) remind online meeting researchers that focus group participants must have internet access or computer skills to learn. Before starting focus groups, the moderator should evaluate the discussion programme's interface and functionalities.

The researcher moderates and interviews participants according to FGD interview criteria. Xmind records while taking notes. FGDs last 60 minutes. After the session, the note-taker reviewed interviewing researcher and shortcomings and improvements. The researcher used software to digitise the FGD voice recordings. Researchers used Atlas.ti software to detect themes and code speech recordings and field notes. The researchers used teacherfriendly terminology to alter the phrase order of the questions based on data analysis. Atlas.ti shows each topic's general response trend. The researcher noticed that specific questions needed follow-up because participants sought more detailed input that was important to the studies. The final version of the updated FGD interview procedures based on expert review and pilot studies is shown in Table 3. The final version contains as many as six main questions and one follow-up question suitable for this study.

Implementation of FGD Interviews

The implementation of FGD interviews was based on the SOP that the research group had developed. FGD implementation can be divided into three parts: before implementation, during data collection, and after data collection.

Before data collection

Before conducting the FGD, the researcher ensured that all documentation, such as approval letters from the Malaysian Ministry of Education (MOE) and the Putrajaya State Education Department (JPN) and the list of participants for each session, was up-to-date. In addition,

the researcher has prepared all of the requirements for carrying out the FGD, such as the implementation schedule, study instruments, and a task list for the moderator. Prior to data collection, participant consent forms were also collected.

During data collection

During the day of data collection, the researcher prepared a chart of the participants' positions and a name tag to facilitate the data collection process. Before starting the session, the moderator briefly explained the purpose of the study, the basic rules of FGD sessions, and confidentiality. The moderator also obtained permission from the participants to record the discussion session and informed them that a note-taker would take discussion notes throughout the session.

The session started with a self-introduction and casual questions to attract participants to engage in the discussion. The moderator then guides the FGD session by asking the leading questions according to the topic, followed by follow-up questions based on the FGD interview guidelines. The moderator has ensured that enough time is given to each participant to present their ideas or views and that just one or two participants do not control the discussion. Suppose there are similarities in the responses given to two different questions. In that case, the moderator will use the "probing" technique by using follow-up questions or hints so that the subject understands and can answer the question more clearly and in detail. The responses received are then categorized into themes with high coding similarity in the Atlas.ti application.

At the end of the FGD session, the moderator allowed each participant to ask questions. Then, the moderator summarizes the critical points that have been discussed and reminds each participant about the confidentiality of the discussion.

After data collection

After all the participants had left, the moderator discussed with the supervisor the feedback from the session and identified weaknesses that needed improvement for the next session.

The data collected during the FGD sessions, such as voice recordings, discussion notes, and feedback from each session, are labelled with the date and time of implementation. The information gathered from voice recordings is converted to digital format, stored, and labelled.

Statistical Analysis

Next, Lawshe's content validity ratio (CVR) was used to analyse each question's evaluator feedback. CVR = (Ne-N/2)/(N/2), where Ne is the number of panels that rate the question "good" and N is the total number of panels that participated in the assessment. The Lawshe Table established CVR values (Ayre & Scally, 2014). Lawshe's

method requires a minimum CVR reference value of 1.00 for a three-person review panel. Thus, queries with a negative value and no reference value will be eliminated. A Content Validity Index (CVI) is better for reporting since it represents an instrument's content validity. CVI is the average CVR of all components in a designed instrument (Gilbert & Prion, 2016). Davis (1992); Virginia P. Tilden et al. (1990) recommend a CVI value of 0.70–0.80.

Results

Content Validity Ratio

Experts verified 4 FGD questions. The FGD guide's CVI is 1.00, suitable for a new instrument. The researcher modified all questions based on expert comments and suggestions. FGD interview guide CVR results are shown in Table 2.

Feedback and Recommendations

Each selected expert commented on the FGD interview guide one month after the invitation email. Their suggestions included the following:

- 1. Going through the materials,
- 2. Dividing one of the items into two parts,
- Keeping one of the items constant, or
- 4. Including items that were suggested.

Following that, in response to the suggestions made by the experts, one of the original four questions was changed. Following the initial inquiry, "What are the challenges teachers often face in planning and implementing Physical Education subject activities based on content and learning standards, and which topics are the most difficult to implement?" Three experts advised dividing it into two: (i) What are the challenges teachers often face in planning and implementing Physical Education subject activities? Moreover, based on content standards and learning standards, which topics are the most difficult to implement? It was proposed to change the format so that respondents would have more time to consider their answers. As if that were not enough, the researchers added a fifth question: "Explain the importance of developing a Physical Education Training Module among primary school Physical Education teachers, and what is the appropriate approach to delivering a Physical Education Training Module?" For additional subjects, the researchers either kept the original question or modified the phrasing based on the advice of an expert panel.

Pilot Study

A primary school in Putrajaya, Wilayah Persekutuan Putrajaya, served as the location for the pilot project, which took place one month before the actual data collection. The pilot FGD was finished within two hours with five teachers. Before beginning the pilot study, the researcher improves the structure and paraphrases the questions. The participants' replies to each topic were evaluated using

Atlas.ti's thematic analysis to identify a recurring theme. The researchers also found a few phrases individuals used often for each problem, which prompted further inquiry.

Table 3 shows the final interview guide based on expert comments and the pilot study. Physical Education Teachers may utilise seven items and probes from the final FGD guide.

Table 2.

CVR Value for Each Item in the FGD Interview Guide

No	Aspects	Questions	CVR	Interpretation
1.	Objective	How do teachers assess knowledge and skills in Physical Education subjects?	1	Retained
		What challenges do teachers often face in planning and implementing Physical Education		
2	Content	subject activities?	1	Retained
۷.		a. Based on content standards/ learning standards, which topics are the most difficult to		
		implement?		
3.	Strategy	How do teachers face the challenge?	1	Retained
	Activity	What do teachers need in a guidebook related to Physical Education?	1	Retained with modification

Table 3. Final Questions for the Focus Group Discussion (FGD)

Aspects	Questions	
Objective	How do teachers assess knowledge and skills in Physical Education subjects?	
Challenge	What challenges do teachers often face in planning and implementing Physical Education subject activities?	
	a. Based on content standards/ learning standards, which topics are the most difficult to implement?	
Content	How do teachers face the challenge?	
Strategy	What do teachers need in a guidebook related to Physical Education?	
Activity	How do teachers assess knowledge and skills in Physical Education subjects?	
Important	Explain the importance of developing a Physical Education Training Module among primary school Physical Education teachers?	
Application	What is the appropriate approach to delivering Physical Education Training Module?	
	Objective Challenge Content Strategy Activity Important	

Discussion

Qualitative research using text rather than numbers helps us understand human experience and meaning within a specific context, interpret experience and meaning to generate understanding, and recognise the researcher's role in creating new understanding (Matua & Van Der Wal, 2015; Mujica Johnson & Orellana Arduiz, 2020). When doing qualitative research, one of the questions that often comes up is the dependability of the interpretation and portrayal of the narratives provided by the participants (Sutherland et al., 2021). In qualitative designs, no statistical test can be used to assess the reliability and validity of the findings, in contrast to quantitative designs (Boldireff, 2021.)

In this research, the FGD interview guide explored the need for a practical module for physical education teachers during teaching. Formulating themes and questions, obtaining expert opinions, and conducting pilot research assessed our FGD interview guide's content validity. The study's aims determined the subject and questions. The Sequential Iterative Model established objectives for research and FGD themes and questions.

The FGD interview guide includes an opening statement, warm-up, interview questions, and a summary statement. It is crucial to have interview guidelines because they help frame the topic, provide questions, and ensure that comparisons are made across different groups. Some topics considered nonstarters in one group could be barnburners in another. In addition, there should be some level of probing (also known as follow-up questions) and engagement from the moderator. The number of finished subjects throughout a session will be determined based on these variables.

Personal experience demonstrates that pre-existing groups may be advantageous when studying delicate and

personal problems since group members trust each other and can share their ideas more honestly (Mallon & Elliott, 2019). Reviewing earlier studies helped us create interview questions. We then asked questions on the literature's unexplored topics. Every guide topic included follow-up, warm-up, and closing questions. As with new measures, a qualitative interview guide for current measures should begin with a comprehensive, open-ended inquiry and study the topic of each item rather than domains and themes previously recognised as potentially necessary, according to the researcher (Masadeh, 2012).

The novelty of this FGD interview guide is that it shows that the possibilities of questions have changed due to expert reviews. The question based on the model underlies the studies, but the expert also reviews its importance and says it must be considered. Acceptance of the argument by Sabar (2008) is also an attempt to highlight the uniqueness of qualitative research, which does not have pre-defined objectives and cannot precisely predict study outcomes. In addition, the expert's analysis of the questions improved the FGD interview guide's importance, clarity, comprehensiveness. Some questions should be rephrased some should be split into two parts, and probes and other pertinent material should be included, as these are some of the ideas and revisions the experts advised. The panel decided that each item may contribute to achieving the study's goals, so they agreed to accept them.

By researching Physical Education Module teacher demands, the pilot study enhanced the FGD interview guide's topic validity. According to (Romero-naranjo et al., 2023), a pilot study determines whether the research tools and procedure are sufficient and feasible. Train researchers in all research processes (Kurum & Cinkir, 2019). his study asked participants follow-up questions to get more detailed and relevant responses. The interview analysis showed a pattern in the terminology participants used to characterise

each problem, suggesting future research (Pacheco et al., 2022). The researchers also found that interview location and time affected data quality. Due to the pilot study's limitations, researchers conducted FGD sessions with teachers outside of work. The researcher will use Xmind to take notes during the Google Meet session.

The final interview guide incorporates experts' opinions from the pilot research. Seven items—including probes—are included. This guide's questions are sufficient for collecting teacher knowledge and experiences with research aims. Quantitative ideas of dependability cannot be used in qualitative interviews since the human part of the interviewer-interviewee relationship is crucial to their outcomes (Wen et al., 2021). Researchers considered this. They covered all issues and prepared suitable investigations to prevent interview problems.

Conclusion

The FGD guide had content validity for research experts, clinical practitioners, and experienced and knowledgeable users and participants. This study develops and validates the FGD guide to debate a solution. The statement by Nurhidayah et al. (2023) underscores the crucial role of physical education research in advancing teacher professionalism and human resource development. Its practical implications range from informing curriculum design and policy formulation to enhancing teacher training, resource allocation, and community involvement. These implications collectively contribute to a more holistic and effective approach to achieving the government's 21stcentury goals.". Other than that, researchers who wish to examine teacher needs and determinants in the general population or analyze the performance of the physical education module may find the present interview valuable guide in the future and benefit others. More study is needed to improve procedural knowledge evaluation and verify the interview guide in other populations, especially in other educational sectors.

Conflict of Interest

The authors declare no conflict of interest.

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Institutional Review Board Statement

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