Exploring the Research Trends-Related Imbalances in Doctoral Level Research on Distance Education in Pakistan

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Abstract

The areas of research and methodological dimensions in the distance education are expanding rapidly due to technological advances (Wong et al., 2016). This research intends to investigate the imbalances in domains of research topics and methodological dimensions in the doctoral level dissertations at Allama Iqbal Open University (AIOU) between 2001-2014. The 37 PhD dissertations accessed from the Higher Education Commission (HEC)'s research repository were selected as the sample of this study, which were reviewed to record the research topics, research types/models, data collection tools and data analysis instruments and categories of the participants. The results of this study revealed imbalanced approach of PhD researchers towards addressing the research areas in distance education and research methodological considerations used to tackle the research issues in doctoral level dissertations at AIOU. The outcomes of this study contribute to the existing literature on the research trends of distance education, in addition to informing the academics, AIOU-based supervisors and HEC-based policy-makers to address the imbalanced approach to achieve the comprehensive picture of the research issues in distance education. This is critical for successful promotion and implementation of distance education and prioritization of research areas in Pakistani distance education sector.

Keywords: Ph.D dissertations, distance education, Allama Iqbal Open University, Higher Education Commission.

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Introduction

Distance education is described to be dynamic and continuously evolving domain of education, which is mainly due to the technological advancements at a global scale (Wong et al., 2016; Bozkurt et al., 2015). As the continuous evolution and development of distance education is dependent on the research activities. The quality of empirical work and investigation into changes and innovations in the distance education field can determine the growth and implementation of distance education across the educational institutions in the word (Kumi-Yeboah et al., 2014). If the research issues addressed by the research activities in relation to distance education are pertinent and address the theoretical and practical obstacles in the way of promotion of distance education, outcomes of such research work can significantly impact the pace of growth of distance education field (Bates, 2005; Vernon et al., 2009).

Therefore, it is critical for researchers to be aware of trends in research works carried out in distance educational field.

Hence, this study aims to explore the trends-related imbalances in distance education in connection with research models/type, methodological dimensions and areas of research in the doctoral dissertations between 2001-2014 at Allama Iqbal Open University (AIOU). The specific research questions guided by the aim of the study are outline below:

- What are the commonly used research designs by the researchers in doctoral level dissertations on distance education between 2001-2014?
- What type of research models/types were employed in the doctoral dissertations at AIOU between 2001-2014?
- Which areas of the research were studied in doctoral dissertations on distance education between 2001-2014?
- What types of methodological dimensions were commonly employed by researchers in doctoral level submitted to AIOU between 2001-2014?
- What were the commonly used data collection instruments by the researchers in doctoral level dissertations on distance education between 2001-2014?
- What types of participants were selected for data collection in doctoral studies between 2001-2014 at AIOU.

The outcomes of this study contribute to provide an insight into the research methods and research issues covered in the field of distance

education at AIOU. In addition, this study also attracts the attention of researchers and faculty members to consider undertaking the most pressing issues but least researched areas in distance education. The analysis of doctoral theses performed by this study contributes to prompt the researchers to conduct the effective research activities which can produce acceptable and practical outcomes focusing on transformation of distance education field in Pakistan.

Previous Related Research Work

Plethora of the research work has been done to explore the research trends in distance education, for example, Berge and Mrozowski (2001) used the content analysis to find the research trends in research articles published in peer-reviewed journals in distance education between 1990-1999, and found that trends in terms of keywords, number of authors, contributions from authors, research areas and research methods. Similarly, another study performed the content analysis of the published research journals between 2003-2007 to show the research trends in the use of research methods, exploration of research areas and number of citations (Lee et al., 2004). Bernard et al (2004) performed a meta-analysis of the literature on distance education between 1985-2002. They found that instructional technologies outperformed the traditional classroom-based teaching methods in higher education sector. Another study performed by Bozkurt et al (2015) showed the trends in distance educational research using the content analysis on research articles published between 2009-2013. They showed the predominant use of frequencies as part of descriptive analysis. They also showed the trends in the research methods, keywords, participants of the studies, conceptual frameworks and variables.

Rourke et al (2007) performed content analysis on 235 articles published between 1986-2001 in the peer-reviewed journals to identify the trends in distance education, research areas, language of presentation and instructional technologies. Shih et al (2008) selected 444 research articles published in 16 peer-reviewed journals, and found that instructional approaches, learning environment and meta-cognition were the most extensively researched areas. The authors further suggested the direction of research approaches to motivation, information processing and instructional approaches to create a greater impact on the development and quality enhancement of the distance education. Wu et al (2012) provided deep insight into the model learning area by performing meta-analysis on 164 studies between 2003-2010. They

showed the popularity of the surveys and experimental research among researchers working on the mobile learning in the distance education. The mobile learning system design and effectiveness of the mobile learning were reported to be the most popular research topics. Shachar and Neuman (2010 produced the similar findings by performing meta-analysis on 125 studies between 1990-2009, showing the outperformance of students instructed through the distance learning compared the traditionally taught students.

The popularity of the research topics relating to the students' support, student's interaction and learning environment were reported by Beldarrain (2007) who performed the content analysis on the distance education to integrate the new technologies for promotion of students' interaction and learning. Davies et al (2010) examined the research trends in graduate and postgraduate dissertations between 1998-2007 in North American universities, and found that most of the students applied the descriptive strategy to report the findings. The data analysis methods were found to be descriptive statistics to measure the experience of stakeholders with the distance education. Hsu et al (2012) cross-analyzed 2976 research articles published between 2000-2009 in the Social Sciences Citation Index, and reported the popularity of the instructional design as the extensively researched area in distance education, and the samples were selected from the higher education institutions. They found that three areas of research were the most focused researched areas: motivation, perceptions and attitudes.

Another study found the research trends using the mining techniques in 119 research articles in peer reviewed journals that means, percentages and frequencies were most widely used data analysis strategies. The areas which drew the attention of researchers in distance education included the personalized systems, evaluation, effectiveness of the pedagogical systems (Hung and Zhang, 2012). Hwang and Wu (2012) reviewed the publications in digital game-based learning between 2001-2010, and found that most of studies could not pinpoint the specific learning domains, and the attention was mostly focused on the motivations of students, perceptions and attitude of stakeholders towards the digital game-based learning. Similarly, Goktas et al (2012) performed content analysis on 460 Turkish articles in distance education between 2000-2009. They reported the educational environment and technology aided instructions were the most focused research areas. The quantitative research methods and questionnaire were used as the highly preferred research design and data collection instrument in most of the studies.

Drysdale et al (2013) assessed the research trends in doctoral and mater level dissertations in the blended learning by performing content analysis on 205 dissertations. They reported three predominant research areas in the blended learning: instructional technologies, performance of students and higher education. They suggested the lack of theoretical research in blended learning while the much of attention was focused on practical learning aspects of distance education.

Taken together, the aforementioned literature showed the trends in research activities in distance education using the content analysis, and focusing on the areas of the research, methods for data collection, data analysis instruments and approach towards the theoretical and practical aspects of the research in the distance education. However, there is scarcity of the studies exploring the research trends using the doctoral dissertations, especially in context of developing countries such as Pakistan. To our knowledge, there is no study conducted in connection to exploring the research trends in doctoral level studies in distance education in Pakistan, therefore, this study is planned to fill the gap in the literature. The development and growth of the educational domains are highly reliant on the quality and contribution of the research work, which suggests that scanning of the current trends in the distance educational research can provide useful insights into and recommendations for ways and means to promote and effectiveness of the distance education in Pakistan. The identification of areas which were over-researched or under-researched is important from the perspective of setting the policy objectives and informing the research institutions to streamline the research resources to create more balanced view of different aspects of distance education. The analysis of research trends in this study will allow the researchers and educational institutions to evaluate the research profile in distance education domain, so that future researchers can be encouraged to work on the ignored areas and the application of effective research methods for investigation of issue on distance education domain.

Research Method

Research Design

The research design used in this study was the content analysis to satisfy the aim of exploring the research trends in distance education in Pakistan. The content analysis was conducted on the PhD dissertations submitted between 2001 and 2014 in AIOU's Faculty of Education.

Goktas et al (2012) described the application of content analysis for screening the required data sets from the large textual data from the books, research articles and dissertations. Previously several researchers have utilized the content analysis-based research design to identify the research trends in the fields of education (Zawacki-Richter et al., 2009; Gokstas et al., 2012; Wu et al., 2012). Furthermore, the content analysis is a useful method for summarizing the data from the texts, written communications and documents, and it may produce either qualitative or quantitative data (Wong et al., 2016). As this study is dealing with large amount of textual data in the form of PhD dissertations to determine the research trends, the content analysis is the most preferred method to obtain the summarized and present data from the target texts.

Population and Sample

The PhD dissertations addressing issues in the distance education constituted the population of this study. The sample of this study was selected from the Higher Education Commission (HEC) repository. All the PhD dissertations uploaded on the HEC research repository were downloaded, and served as sample for this study. The PhD dissertations uploaded between 2001 and 2014 on the HEC repository were chosen for the data collection. After screening HEC repository, 37 doctoral level theses met the selection criteria; therefore, the number of samples for this study was 37 PhD dissertations submitted to the Department of Distance, Non-formal and Continuing Education at AIOU between 2001 and 2014. The random sampling technique was employed to select the sample from the population, which was a useful method to alleviate the biasedness from the selection process. The random sampling method is considered an effective strategy for selection of representative samples from the large population (Creswell et al., 2011).

Data Collection Instrument

The Educational Research Dissertation Form (ERDF) was used as a data collection instrument. The ERDF was previously used and validated by Goktas et al (2012), which contained four sections: research topic/areas, gender of the researchers, methodological section, and modes of data analysis.

Data Analysis

The data collected through ERDF were quantitative data, which were analyzed using the descriptive statistics. The frequencies and percentages were calculated to summarize the data. The graphs and tables were employed to present the summary of data. The statistical procedures were implemented using the Microsoft Excel software. Two raters assessed whether the doctoral theses were based on qualitative method or quantitative method or mixed method. Similarly, the research areas identified in doctoral theses were also verified by both raters. The criteria stipulated by Creswell and Clarke (2017) for qualitative, quantitative and mixed method were used to classify the research methods in the reviewed doctoral theses. The inter-reliability analysis was performed using the Cohen k statistic for determination of consistency of raters' judgments, and k-value was found to be 0.78. Landis and Koch (1977) described that value of k ranging from 0.40-0.59 and 0.69-0.79 are considerate moderate and substantial, respectively. Therefore, the value of k shows that there was substantial level of agreement between two raters on the types of research methods and research areas identified in the reviewed doctoral theses.

Findings and Discussion

Trends in research areas

The PhD dissertations on distance education submitted to the Department of Distance, Non-formal and Continuing Education at AIOU between 2001 and 2014 were scanned to identify the trends in research areas. It was found 30 of the PhD dissertations worked on the area of instructional technology, which stood out as the most popular research area. The research activities on the students' support and faculty development were found in 18 dissertations and 15 theses, respectively in the PhD dissertations between 2001 and 2014. Therefore, the research on students support and faculty development were second and third frequently researched areas in distance education in Pakistani context, followed by exploration of learners' characteristics (N= 10), education technology (N = 9), and research methods development (N = 8). This study found that some areas were the least researched areas, for example, Interaction and communication (N = 3), Innovation and Change (N = 3), quality assurance (N = 2). The data are presented in the Figure 1.
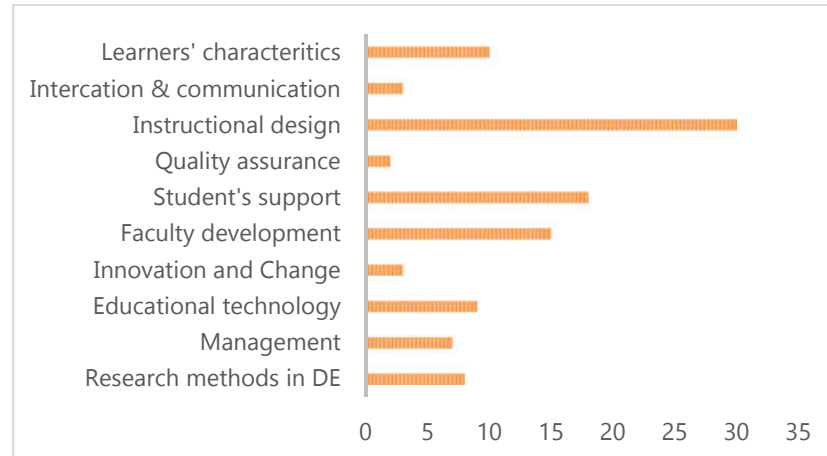
Figure 1: The trends of research areas explored in doctoral theses in distance education
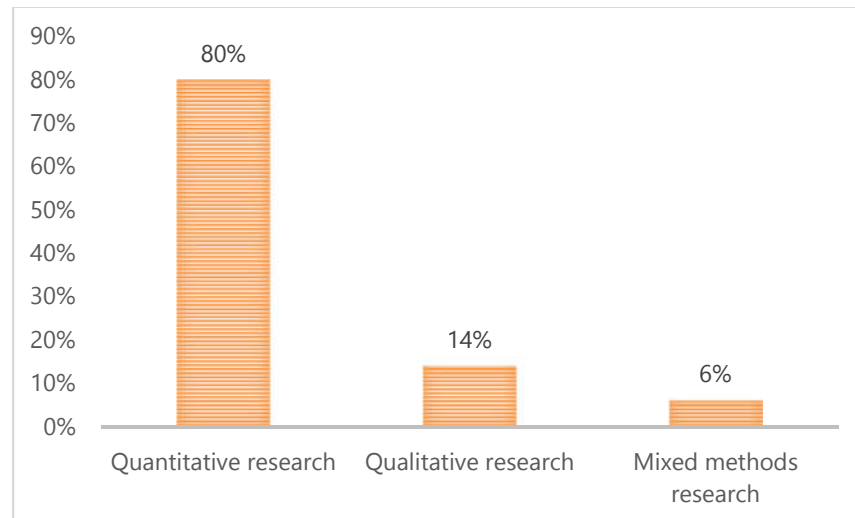
In line with findings of this study, Zawacki-Richter et al (2009) provided evidence by conducting content analysis of the research articles regarding the excessive research activities to solve the issues in instructional designs in distance education. Another study reported the increasing research trends in the area of students' support, which corroborated the finding of this study (Wong et al., 2016). Many scholars showed the rising research trend in areas of quality assurance and management (Hwang et al., 2012; Hsu et al., 2012); however, these areas were the least research areas in Pakistani context. Based on these findings, this study suggests to promote the quality assurance in distance education and management of the distance learning, so that students can fully benefit from the distance education through alleviation of issues related to the quality and management aspects in the distance education field. In addition, the innovation should also be researched by researchers at AIOU, as the development of new instructional technologies can improve the delivery of curricula to students in more effective manner (Davies et al., 2010).

Trends of Application of Research Methods

This study revealed that quantitative research method was the predominant research design used in the PhD dissertations submitted to the Department of Distance, Non-formal and Continuing Education at

AIOU between 2001 and 2014. The second most used research design was the qualitative method (14%), followed by the mixed method research design (6%). The data are shown in the Figure 2.


Figure 2: The trends of application of research designs in doctoral theses on distance education.

In line with the findings of this study, Drysdale et al (2013) reported the predominant application of quantitative research design in the distance educational research articles. Similarly, another study showed the use of quantitative methodologies to explore the issues in the distance education sector after performing the content analysis on the research articles related to the online learning. Several other studies showed the application of qualitative method as the second most useful method for exploring the problems in the distance educational research (Garrison, 2011; Chang et al., 2010). It has been suggested that the mixed method can produce more reliable findings compared to the single research method (Creswell and Clarke, 2017). Therefore, this research suggests the use of mixed method in the distance educational research to plan robust research activities at AIOU for improving the quality of research on distance education.

Trends of Data Analysis Procedures

This study examined the trends in terms of using the data analysis

tools, and it was revealed that use of the descriptive statistics was the most applied data analysis tools. Different methods in relation of descriptive statistics were applied in the doctoral dissertations, among which the mean and percentage (86%) were most preferred approaches to analyse the quantitative data. The second most used method was the use of Chi-square test (73%), followed by T-test/Z-test (62%), ANOVA (46%). Correlation was the least used data analysis tool (27%). In the PhD dissertations between 2001-2014, the thematic analysis was used by 22% of the theses, which was due to the lesser application of the quantitative methods (Figure 3).
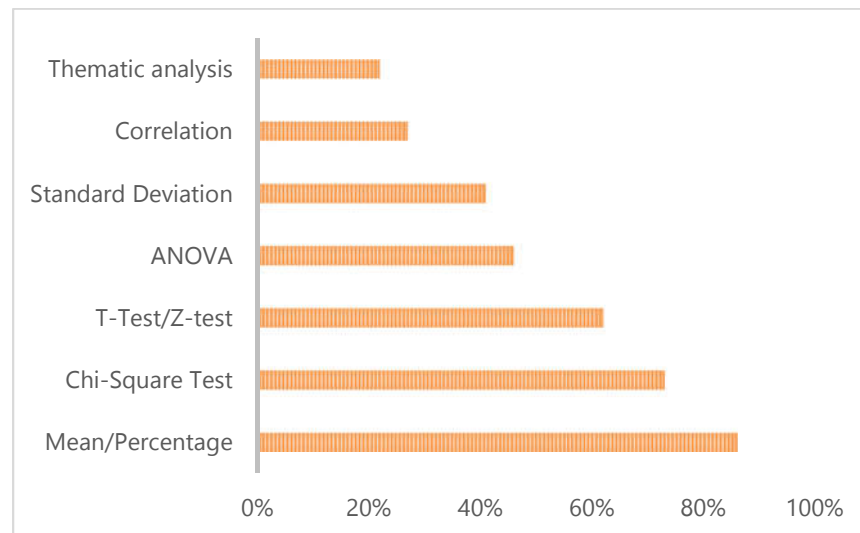

Figure 3: Trends in the use of data analysis procedures in doctoral dissertations on distance education.

Zawacki-Richter et al (2015) showed similar findings, revealing the use of mean/percentage in most of the research articles published in the field of distance education. Chang et al (2010) revealed the increasing trend of application of Chi-Square test and T-test in studies on distance education. These data support the findings of the current study. The use of ANOVA was reported to be used to lesser extent in research articles dealing with issues in online learning, which corroborates the findings of this study (Goktas et al., 2012).

Trends of application of Research Types

This study assessed the trends in the use of research models. It was found that the predominantly used research model was the survey research which was utilized by 54% of PhD dissertations between 2001 and 2014. The second most used research model was the co-relational research model (35%) to examine the associations between variables, followed by grounded theory-based research models (32%), casual research (19%). The case study and experimental research models were used by 11% of PhD dissertations on distance education. The historical research and applied research were the least used research models in distance education. The data are shown in Figure 4:
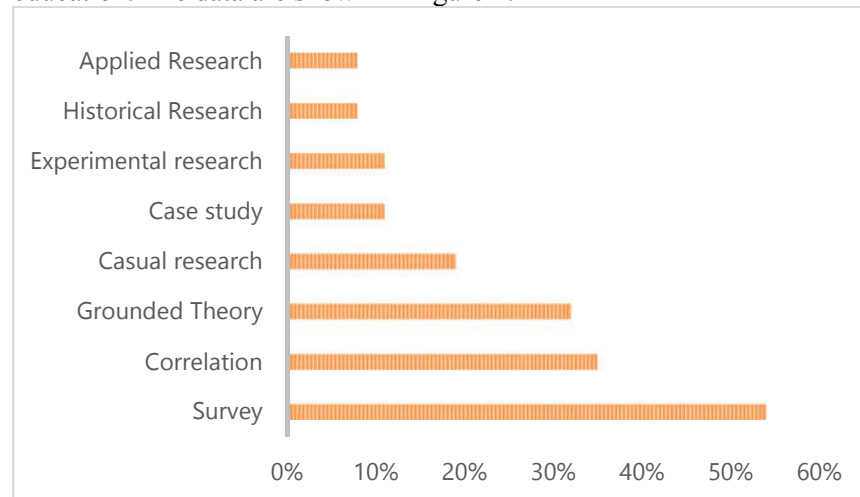
Figure 4: Trends of the use of research types in PhD dissertations on distance education.

It is clear from the data presented in Figure 4 that surveys and correlations occupy the top positions in the PhD dissertations which is in accordance with excessive application of quantitative research methods in the PhD dissertations. Bozkaya et al (2012) demonstrated the predominance of survey research in online education, which is in line with the findings of this study. Applied level research models are in lesser use in distance education, as showed by content analysis of research articles conducted by many research works (Hung and Zhang, 2012). The practical issues in the contemporary settings of distance education cannot be improved unless the applied research models are used by the researchers (Moore, 2013). Therefore, it is important to

promote the research activities involving the historical and applied research models at AIOU to learn the lessons from the past and solve the practical problems encountering the development and growth of distance education learning in Pakistani higher education settings.

Trends of the Application of Data Collection Tools

This study found that multiple choice questions (MCQs) based data collection tool was the most preferred instrument used by researchers at AIOU between 2001 and 2014 in the PhD dissertations on distance education, while the Likert-scale questionnaire was the second most popular data collection instrument used in the PhD dissertations analysed in this study, followed the interviews as part of the quantitative research method, followed by electronic documents (9%), focus groups (8%), documents (6%) and achievement test (3%) (Figure 5).
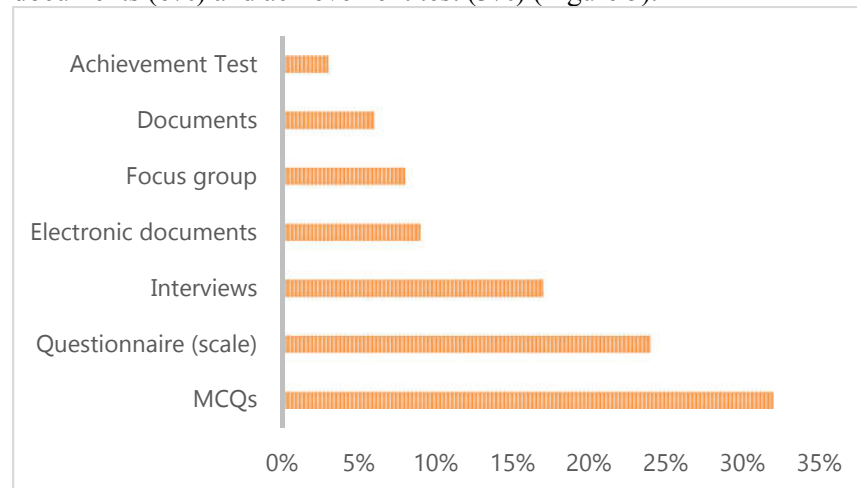

Figure 5: Trends of application of data collection instruments.

Davies (2010) revealed that questionnaire was the predominantly used data collection instrument in research on distance education, which supports the finding of this study. They further reported the application of interviews as the second most used data collection instrument, which was due to the application of qualitative research method as the second most preferred research method in the distance educational research. Many other researchers produced the similar findings in the content analysis of the research articles on the distance educational research (Maurer and Salman Khan, 2010; Bozkurt et al., 2015)

Trends of Selection of Participants

It was found that students were mostly targeted to serve as a sample in the PhD dissertations. Among the students, graduate students were the preferred sample (25%) for the researchers, followed by the higher education teachers (15%). The undergraduate students (13%) was selected as research participants in only 13% of the PhD dissertation, which made undergraduate students as third most important category of participants. It was showed that the least used participants in the PhD dissertations were higher education specialists (7%) and higher education institutions (5%). The data are presented in Figure 6.
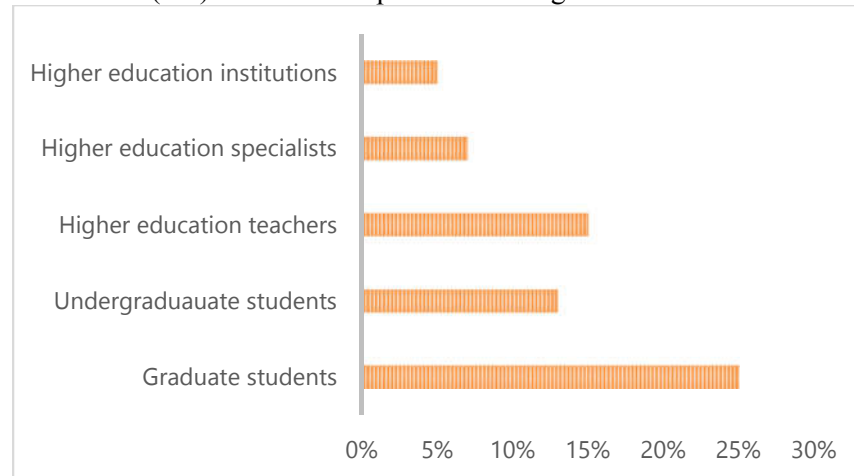
Figure 6: The categories of participants selected for data collection in PhD dissertations between 2001-2014.

The high preference of the researchers at AIOU for the students indicated that students' experiences about distance education were the targeted subjects. However, the trend of giving the least preference to the higher education institutions and specialists prevailed between 2001 and 2014, indicating that less research work has been done on exploring the impact of policies and future guidelines for streamlining the distance education in Pakistani higher education context. Many other researchers showed that researchers gave more preference to students to collect the data on distance education related issues, which corresponds to our study (Durak et al., 2017; Bozkurt et al., 2015). This suggests that there is a need to collect data from the higher education specialists and institutions to address the policy related issues for increasing the quality of distance education in Pakistani institutions.

Conclusions

This study revealed the research trends-related imbalances in the doctoral level research on distance education in Pakistani higher education context with focus on the AIOU. Some imbalances related to areas/topics of the research were reported, for instance, the instructional design, students support, learners' characteristics and faculty development were found to be most popular topics among the doctoral level researchers in AIOU between 2001-2014. However, some important research areas such as quality assurance, management, and research methods development in distance education could not attract significant amount of attention from PhD level researchers. This imbalance needs to be corrected by focusing on the ignored or least researched areas to provide a balanced view of the research issues in various areas/domains of the distance education.

Similarly, certain imbalances were supported in research trends related to methodological dimensions such as quantitative research design was the most used design while the mixed method research design was the least used one in distance education. Moreover, the survey research models were the highly used research model compared to the grounded theory, historical research, and applied research models. These data indicated that excessive focus on quantitative methods and survey research model could only yield fixed data and limited understanding of research issues in distance education in Pakistan. The development of distance education should be coupled with the promotion of a varied research models and research designs to address the research issues effectively. This study found a predominance of descriptive statistics involving mean/percentages and Chi-square tests in most of doctoral level thesis, while the application of correlation and ANOVA were less frequently sued, indicating the lack of association models in the distance education research.

In addition, the casual research models need to be promoted to investigate the effect of different variables on each other, which will yield cause-effect relationships between different factors affecting the development and implementation of distance education. In addition, the supervisors at AIOU should encourage the students to use the least used methodological dimensions to increase research reliability. The research proposals on the least researched areas in distance education should be developed by the future researchers to produce comprehensive solutions for the most prevalent issues in the distance education in Pakistani higher education context.

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