SDG 4 in Practice: A Mixed-Methods Study of Faculty and Student Perceptions in Lahore's Higher Education Sector

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Abstract

This goal of this study is to explore that how permanent faculty members at Pakistani universities feel about Sustainable Development Goal 4 (SDG 4), which stresses that everyone should have access to high-quality, inclusive education and opportunities for lifelong learning. The study also looks at some of the specific goals of SDG 4, like 4.1 (making sure that everyone can get free, high-quality primary and secondary education) and 4.4 (helping people learn skills that will help them get a job, a good job, or start a business). The researchers used a basic random sampling method to get data through semi-structured interviews as part of a mixed-methods approach that includes both quantitative and qualitative designs. There were 20 faculty members in the study, 10 from two public universities and 10 from two private universities in District Lahore, Pakistan. The results show that most of the people who took the survey knew about sustainable development in general. However, many said that the way things are taught now does not match the goals of SDG 4 (Unterhalter, 2019). The study also included students, who were worried about not being able to get to school, having unequal learning opportunities, and the gap between what they learn in school and real-world skills. Also, the people who took part said that technology integration is still not being used enough to make learning spaces that are welcoming and useful for everyone (Faisal, et al., 2023). The findings show how important it is for both teachers and students to think positively about school for it to last. The study's findings are helpful for schools in Lahore because they show how to get teachers and students more involved in achieving the goals of SDG 4. The study also adds to the body of knowledge by describing how faculty feel about SDG 4 and what they can do in the classroom to help make it happen in higher education.

Key Words: SDG 4, Higher Education, Pakistan, A Mixed-Methods Study, University faculty member

Introduction

The Sustainable Development Goals (SDGs) were officially announced at the United Nations (UN) Summit on Sustainable Development on September 25, 2015. The UN created the 17 SDGs during this summit (see Table 1). These goals will guide countries to address the most important global sustainable development issues until 2030 (Frey & MacNaughton, 2016). The goals for the next fifteen years are mostly the same for all countries. They ask that all countries work to protect the environment, include everyone, and grow their economies. The SDGs apply to all countries and are important for all of them. The Millennium Development Goals (MDGs) were meant to be put into action only in developing countries at the same time. All countries, regardless of income level, are urged to pursue the SDGs (Servaes, 2017). Everyone is inspired to accept, carry out, and eradicate extreme poverty and hunger by the global objectives. Furthermore, the international community needs to work together in a way that lasts in order to make things better and bring about positive changes in education, health, social protection, climate change mitigation, and environmental protection. The SDGs take into account methods for gauging progress and accomplishing different goals because many issues are interrelated (Pogge & Sengupta, 2015).

Source: The United Nations (UN) cited in Easterly (2015)

SDGs	Goal	Description
1	No Poverty	Work towards ending poverty in all its manifestations globally through targeted and inclusive development efforts.
2	Zero Hunger	Eliminate hunger by ensuring food security, improving nutrition, and adopting sustainable agricultural practices.
3	Good Health and Well-Being	Ensure that people at all stages of life have access to high-quality healthcare services in order to promote health and well-being.
4	Quality Education	Make sure that everyone in society can get a good education that includes everyone and that they can keep learning throughout their lives.
5	Gender Equality	Empower women and girls and eliminate gender disparities in all areas of social, economic, and political life.
6	Clean Water and Sanitation	Guarantee access to safe, affordable, and sustainably managed water and sanitation services for everyone.
7	Affordable Energy	Ensure that everyone has access to reasonably priced, dependable, and sustainable energy solutions.
8	Decent Work and Economic Growth	Promote sustainable, inclusive economic growth that gives everyone access to decent work and productive jobs.

9	Industry, Innovation, and Infrastructure	Encourage sustainable industrialisation, build strong infrastructure, and aid in development driven by innovation.
10	Reduced Inequalities	Assure fair access to opportunities and resources to lessen disparities both within and between nations.
11	Sustainable Cities and Communities	Encourage inclusive, secure, resilient, and ecologically sustainable urban and rural development.
12	Responsible Consumption and Production	Encourage environmentally friendly production and consumption practices to protect natural resources.
13	Climate Action	Take prompt, consistent action to mitigate the negative effects of climate change.
14	Life Below Water	Protect marine environments and make sure that resources found in the ocean and at sea are used sustainably.
15	Life on Land	Preserve biodiversity, avoid desertification, manage forests responsibly, and safeguard terrestrial ecosystems.
16	Peace, Justice, and Strong Institutions	By guaranteeing justice for all and enhancing institutional accountability and transparency, we can create inclusive, peaceful societies.
17	Partnerships for the Goals	Enhance implementation strategies and renew global partnerships to support sustainable development agendas

It's important to know what teachers think about education for sustainable development because they have a big impact on how a child grows and develops in the early years. As these kids get older and go to professional colleges and universities, highly trained and experienced teachers work hard to teach them, improve their skills, and shape their behaviour so they can help make society better (Bruns et al., 2019). One of the most important things that can change society is its faculty. Like every other country, Pakistan wants to make life better for its people. People think that education can have a big and lasting effect on the economy and people's quality of life. Most countries and development experts agree that the best way to make the world a better place is to make sure that everyone can get a good education. The current change in education for sustainable development (Khushik& Diemer, 2018) has a direct effect on how well young people learn to think critically and stay mentally healthy. Sustainable development aims to make people's lives better by combining social, environmental, and economic growth. The Sustainable Development Goals (SDGs) are a global effort to solve problems that affect everyone. They call for a new way of thinking about development that uses multi-partner organisations to push for policies that are comprehensive, integrated, and adaptable, and that could change the whole system. The United Nations (UN) Agenda 2030 says, "No one should be left behind" (Kalsoom et al., 2018). This means that all the social and economic capital that countries have agreed to share

will help people achieve the SDGs. SDGs are important because they apply to everyone, look at the whole system, and can't be broken down (Makhdum, et al., 2023).

In light of Agenda 2030, it's hard to overstate how important education is for developing societies. To reach SDG 4 (United Nations, 2015), the MDGs stressed making sure that every child around the world gets a basic education. SDG 4 wants to reach this goal by using education as a way to bring about bigger, longer-lasting change (Liverman, 2018). People might be able to move up in society and close the gaps that exist now if they have the chance to get a good education and finish it. So, it is correct to say that education can help reach SDG goals, but if it is ignored, the effect could be the opposite (Hackl, 2018). The fourth industrial revolution job market needs a lot of IT knowledge, so young people who invest in their education will be better prepared for it. Education is also what helps governments and communities deal with small problems like global warming and climate change (Comyn, 2018).

As we work towards SDG 4, more and more people are realising that both getting students involved and using technology are important parts of fair and inclusive education. Students are not just passive recipients of education; they are also active participants whose points of view can help us understand issues like access, learning equity, and the usefulness of skills (UNESCO, 2022). In many developing countries, like Pakistan, differences in digital access and a lack of student-centered approaches make it hard to reach the SDG 4 targets (Reimers, 2021). Also, using educational technology in the right way is important for making learning spaces that are flexible, open to all students, and responsive to their needs (Anderson, 2020). If these issues aren't dealt with, educational systems may have a hard time meeting the bigger goals of lifelong learning and employability set out in SDG Targets 4.1 and 4.4.

Sustainable Development in Pakistan

Pakistan is a part of a world community that is changing in terms of social and economic issues. A lot of people were interested in health and education during the Covid-19 pandemic in 2019 and 2020. People were told in 2016 that work to make schools better would continue (Saban et al., 2021). Pakistan officially adopted the SDGs in 2016 and started using them in the country's main talks about policy and development. In 2015, the UN released 17 SDGs. One of them was SDG 4, which means "provide inclusive and equitable quality education and expand lifelong learning opportunities for everyone" (Khan & Chang, 2021). Since the 1990s, the Pakistani government has worked hard to make sure that everyone gets a primary education. But the government has been making plans for long-term growth over the past few years (Khan et al., 2019).

Pakistan is thought to be the first country to adopt the SDGs 2030 Agenda because most of its parliament members voted for it. After reaching the MDGs, the federal and provincial governments of Pakistan talked to all the important people about their plans for long-term growth and lowering poverty.

The importance of establishing national systems for identifying SDGs, obtaining additional data, and monitoring progress became evident during the consultation process (Ali, 2018). The United Nations Development Program (UNDP) and the federal government established

the SDGs Monitoring and Coordination Unit (SMCU) as the national coordinating organisation. The same groups were formed by the provinces as well. The government made a commitment to prioritise education and gave it particular consideration (Noor & Pickup, 2017).

Significance of the Study

A lot of social, economic, religious, and cultural factors affect how many students in Pakistan go to school or college. One of the main goals of the government of Pakistan is to reach the goals set by SDG 4 and improve the quality of education. This study will look more closely at how teachers feel about SDG 4 and what needs to be done in the classroom to reach the goals.

Objectives of the Study

1. To assess university faculty members' understanding of sustainable development and gather their views on the government of Pakistan's implementation of SDG-4.

2. To figure out the impact of demographic factors on the opinions of faculty members at the university level toward the implementation of SDG-4.

Literature Review

Sustainable development, education for sustainable development, and sustainability are all linked because they all come from the same basic ideas. Education is a way to reach sustainable development, but sustainable development is a process. The word "sustainability" came from the Brundtland Report. This review of the literature looks at how different schools of thought talk about the connection between education and sustainability (Agbedahin, 2019).

Albeit "education" is contextual, each culture has its own way of understanding what it means. There is still no agreement on what "education" means (Pellaud et al., 2019). Most teachers and academics agree on what education is, even though the meaning of the word changes depending on the context. Most people agree that an education system that works well has four main parts: knowledge, skills, behaviour or attitude, and creativity. If the world wants to reach the SDGs, education is very important (Bush, 2020). We explore at education today through the lens of training teachers to make sure that future generations understand how important sustainable development is. SDGs are important because they focus on fairness instead of equality. They also know that not every country and culture is the same, so you can't always use the same strategies and expect them to work. The system for SDG 4 lets everyone, including civil society, businesses, parliament, the academic community, and the government, agree to work together to reach the SDGs (Ferguson & Roofe, 2020).

Recent research and conversations about education and sustainable development back up the idea that the safety of people and the earth are linked in the long term. Building a society that will last and give everyone the same chances is very important. People believe that the only way to change society for the better in the long term is to change the way schools work. Popescu (2021) says that education can help countries get rich, stay peaceful, and find ways to survive in the long term, which would make life better for their people. A good education

helps people grow and gives them the tools they need to make a difference in their community and the world. Education makes society more peaceful and diverse by giving people new ways to think and see things (Khushik& Diemer, 2020). The UN's Universal Declaration of Human Rights (UDHR) from 1948 put a lot of emphasis on education in Article 26. It said that education is a basic human right that is necessary for people to grow and be healthy (Gillett-Swan & Sargeant, 2018).

In the past few years, the 2030 SDGs Agenda and Education for All (EFA) have both shown how important education is for everyone in the world. Education is important because it helps end poverty, lower child death rates, achieve gender equality, and make sure the future is bright. In 2015, 193 member countries agreed to SDG 4 and promised to make sure that everyone could get a good education (Bengtsson et al., 2018).

Article 25-A of Pakistan's 2010 constitution says, "The State should offer free and compulsory education to all children between the ages of five and sixteen." The provinces have changed the Right to Education (RTE) Act. This helps the federal government get the information it needs to reach the national SDG goals (Ali et al., 2021). After the 2018 general elections in Pakistan, the government made more detailed plans to put the RTE into action for kids, teens, and adults. This was done to make sure that everyone had the same rights. But it won't be possible to reach the SDGs and gender equality without faculty (Nawaz et al., 2021). Most people today think that faculty members are important for improving education, and that the only thing that can make an education system worse is having bad faculty members.

There hasn't been any visible progress towards reaching SDG 4 since 2015. It is thought that more than 69 million primary and secondary school teachers would be needed to reach the goal of universal education set by Agenda 2030.

Governments can help by making it easier for more people to become teachers through policies (Brollo et al., 2021). The Incheon Declaration 2030 says that one of its goals is to "make sure that within well-resourced, effective, and well-controlled unions, bodies, institutions, or associations, educators and education managers are empowered, well-resourced, well-trained, professionally competent, driven, and supported (Sui, 2020). Regretfully, fewer people are interested in becoming teachers, according to faculty member associations and teachers' unions worldwide.

Unions play a big part in making sure that University's faculty members have fair conditions for jobs. This is important for reaching SDG-4 and making sure that all students get a good education (Hinduja, 2021). Let's say that the next generation needs to be ready to deal with problems like climate change, dwindling natural resources, and changing populations. If that's the case, they need to learn about sustainable development. Many people started to worry in the 1970s and 1980s that the way industrial society made and used goods wasn't sustainable because it used up so many resources. In a 2002 report, UNESCO said that the SD movement took advantage of these fears (Ullah et al., 2020). To help countries reach SDG 4 by 2030, eleven targets were set. These goals are meant to make it easier to keep track of and judge how well a country is doing in reaching SDG 4. Seven are the goals, and the other three are the ways to reach those goals (Rashid, 2019).

It is important to consider what students think when judging how inclusive and relevant education is under SDG 4, especially when looking at fair access and skill development (Unterhalter, 2019). Research shows that students often find that what they learn in school doesn't apply to the real world (Reimers, 2021). At the same time, the use of digital technologies is very important for improving quality, inclusive education because it makes learning environments more flexible and focused on the needs of the students (Anderson, 2020). But digital inequality and a lack of teaching training for faculty are still problems in many developing areas (UNESCO, 2022). To fully achieve the goals set out in SDG Targets 4.1 and 4.4, we must first deal with these problems.

METHODOLOGY

This study is both qualitative and quantitative, so semi-structured interview questionnaires were made to gather and analyse data in the right way. There were 20 questions on the interview questionnaire. Of these, seventeen questions had a set answer, while three did not. Twenty tenured professors from public and private universities were chosen at random based on how long they had been working there. There were equal numbers of male and female tenured faculty members chosen from two public and two private universities in District Lahore, Punjab, Pakistan. This study included both faculty and student input to give a more complete picture of how SDG 4 is being put into action. We chose ten students from each of the four participating institutions (two public and two private universities) on purpose to make sure there was a range of experiences. Data from students were collected through structured questionnaires and follow-up focus group discussions. The study also looked at how technology is used in schools by including survey questions and interview questions about the availability, use, and perceived effectiveness of educational technology. This mixed-methods design made it possible to compare faculty and student opinions across both quantitative and qualitative data streams.

Data analysis and findings

The data was carefully organised to show and explain patterns, themes, connections, criticisms, or new ideas (Hatch, 2002). The researchers looked over the interviews and grouped the answers into themes after they had been transcribed for qualitative analyses (Alhojailan, 2012). We put the answers into groups for quantitative analysis, such as "strongly agree," "agree," "disagree," "strongly disagree," and "neutral." Frequency percentiles were used to look at the answers statistically (Gorard, 2001). The highest recorded response was put into a table based on the results.

Qualitative Analysis

The faculty members' comments were coded and grouped. The following themes were used to group the results (United Nations, 2015):

SDGs in Pakistan: Key Thematic Focus Areas

➤ **Theme 1: Enhancing Public Understanding**

Focus on raising awareness and knowledge about Sustainable Development Goals.

➤ **Theme 2: Integrating SDGs into Curriculum**

Aligning educational content and teaching practices with SDG targets.

➤ Theme 3: Government Involvement and Execution

Role of policies, ministries, and institutions in implementing SDG-related programs.

Faculty awareness of the Sustainable Development Goals (SDGs) is the first theme. The majority of faculty members demonstrated a strong understanding of the core concepts underlying the Sustainable Development Goals (SDGs) based on their responses. Many participants talked about integrating sustainable practices into their personal and professional lives. According to their viewpoints, human-environment interaction is at the heart of sustainable development. They believe that human agency is essential to both promoting sustainable alternatives and contributing to unsustainable practices.

According to one respondent, education is essential for developing mutual understanding and self-awareness as well as for influencing people's interactions with larger social and natural ecosystems. They underlined that this awareness fosters a long-lasting sense of respect and accountability for sustainability.

The second theme is incorporating the SDGs into the curriculum. Most faculty members concurred that a key component of sustainability-oriented curricula should be teaching students about environmental issues. The conservation of biodiversity, ethical considerations, waste management, pollution control, and resource responsibility were among the main areas that were identified. In keeping with the SDGs' goals, faculty also emphasised the significance of matching curriculum to regional and global sustainability issues.

Some participants suggested incorporating sustainability-related ideas into the curriculum in ways that encourage environmentally conscious attitudes and actions. Specific examples included raising awareness about water resources, freshwater biodiversity, and human dependence on ecological systems. Although sustainable development is not yet offered as a stand-alone subject in the national curriculum, faculty stressed that it can still be successfully incorporated into a variety of academic fields and extracurricular activities, especially at the school level. In order to guarantee long-term impact, this integration was seen as a crucial step for civil society and educational institutions.

Theme 3: Implementation of Policies and Government Involvement Participants, including faculty and students, underlined how important the state is to guarantee the SDGs are widely implemented, especially in the field of education. Participants voiced worries that current initiatives might be unduly focused on a few priority areas, which could exacerbate inequality and impede progress towards SDG 4's more general goals. To guarantee thorough development in every area, they called for a more equitable allocation of educational resources.

Furthermore, respondents emphasised that government policies pertaining to sustainable development would probably produce better results if they were created in cooperation with

community stakeholders and local leaders. In order to better adapt strategies to local needs and increase the relevance and acceptability of policies, this participatory approach was considered crucial.

Quantitative Analyses

Table 3: Faculty Members' Reactions to SDG 4 and Pakistan's Status of Implementation.

SDG 4 and Its Execution in Pakistan (N=20)

Sr.	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Neutral	Max Response Recorded
1	The infrastructure for universal access to education has been established by the Pakistani government.	02 (10%)	02 (10%)	03 (15%)	11 (55%)	02 (10%)	55% strongly disagree
2	Teachers comprehend the idea of sustainability and have received sufficient training.	00 (00%)	01 (05%)	02 (10%)	16 (80%)	01 (05%)	80% strongly disagree
3	To care for the schoolchildren, the Pakistani government has supplied the necessary skilled labour force at the primary level (early childhood education centres).	00 (00%)	01 (05%)	01 (05%)	18 (90%)	00 (00%)	90% strongly disagree
4	Primary school teachers have received sufficient training to comprehend and handle the needs of students under five.	01 (05%)	03 (15%)	10 (50%)	05 (25%)	01 (05%)	Disagree (50%)
5	The schools have adequate infrastructure to meet the needs of students of all genders in a supportive setting.	01 (05%)	01 (05%)	04 (20%)	13 (65%)	01 (05%)	65% strongly disagree
6	The schoolchildren are content and involved in a variety of educational activities.	00 (00%)	00 (00%)	02 (10%)	17 (85%)	01 (05%)	85% strongly disagree
7	The government keeps	01	00	00 (00%)	18 (90%)	01	90% strongly

	a close eye on early childhood education facilities and schools.	(05%)	(00%)			(05%)	disagree
8	Because the schools offer high-quality instruction, more parents choose to enrol their kids there.	01 (05%)	01 (05%)	00 (00%)	18 (90%)	00 (00%)	90% strongly disagree
9	The school managers have received training on how to oversee and manage the school's operations.	01 (05%)	01 (05%)	01 (05%)	17 (85%)	00 (00%)	85% strongly disagree
10	Enough money has been given to the schools to set up labs for scientific research.	00 (00%)	00 (00%)	01 (05%)	19 (95%)	00 (00%)	95% strongly disagree
11	Boys and girls now have separate rest areas.	04 (20%)	03 (15%)	10 (50%)	03 (15%)	00 (00%)	Disagree (50%)
12	In schools, boys and girls receive the same treatment.	03 (15%)	02 (10%)	06 (30%)	08 (40%)	01 (05%)	40% strongly disagree
13	Enough facilities have been made available for children with physical disabilities.	00 (00%)	01 (05%)	01 (05%)	18 (90%)	00 (00%)	90% strongly disagree
14	Parents receive regular updates on their children's progress.	00 (00%)	02 (10%)	06 (30%)	10 (50%)	02 (10%)	50% strongly disagree
15	The schools have taken action to provide transport facilities.	02 (10%)	02 (10%)	04 (20%)	10 (50%)	02 (10%)	50% strongly disagree
16	Students from various religious backgrounds receive equitable treatment.	03 (15%)	03 (15%)	05 (25%)	08 (40%)	01 (05%)	40% strongly disagree
17	The curriculum at the school is current and covers contemporary sustainability issues.	00 (00%)	00 (00%)	03 (15%)	17 (85%)	00 (00%)	Very Disagreeable

Table 3 shows how many and what percentage of the responses came from twenty tenured faculty members at public and private universities in District Lahore, Punjab, Pakistan. The table shows that most teachers are not happy with how Pakistan is putting SDG 4 into action.

For each of the 17 questions in the semi-structured interview questionnaire, they chose "strongly disagree" or "disagree." Faculty members said they were worried that the government needed to be more involved in Pakistan's proper and spiritual implementation of SDG 4.

Faculty members expressed dissatisfaction with the school's lack of infrastructure, accessibility problems, curriculum design that emphasises sustainability, equal treatment of boys and girls in the classroom, inadequate training for teachers and school administrators, and a lack of appropriate activities for students with physical disabilities and those from different religious backgrounds. The table displays the percentage of answers to each question.

Khan (2019) says that Pakistan might want to put money into social science research, hold public debates, and make new policies based on what comes out of these debates. This would help Pakistan build a knowledge-based economy that supports research that comes up with new ways to solve problems and challenges related to sustainable development in a smart and effective way. The findings of this study support our case for teaching SDG 4 in schools. "Education is at the core of the 2030 Agenda for Sustainable Development and necessary for the success of all SDGs" (UNESCO, 2015) is the best statement UNESCO has made about the importance of high-quality education. The literature and earlier global goals and plans place a strong emphasis on education as a vital tool for advancement in a variety of areas, such as critical decision-making abilities, responsible and productive citizens, and global citizenship.

Many students were worried about not having equal access to good learning materials, especially those from low-income backgrounds. Many people said that there was a gap between what they learnt in school and what they needed to know to get a job. This is in line with SDG 4.4. Students also said that some online learning tools were available, but that the inconsistent use of technology across departments made them less useful overall. Faculty agreed with these worries, but they often said they didn't have enough training or support from the school. Both groups stressed the need for more inclusive and useful places to learn, and they thought that digital tools and new teaching methods were essential to achieving the goals of SDG 4.

CONCLUSION

The university faculty in Pakistan shared their thoughts on SDG 4 and how it should be implemented in the country. According to the findings, the majority of faculty members called on the government to prioritise the SDGs, provide funds and resources, regularly monitor goal progress, and work together to help the global community achieve the SDGs, particularly SDG 4. Descriptive statistics were used to look for patterns in student survey data about access, satisfaction, and perceived gaps related to SDG 4 targets, especially those about skill-building (4.4) and inclusive access (4.1). We used thematic analysis on the qualitative responses from focus groups. We coded the responses into groups based on digital learning experiences, how relevant the curriculum was, and barriers to education. We did a cross-group analysis to see how faculty and students saw things differently, especially when it came to how technology can help make higher education more fair and promote lifelong learning.

LIMITATIONS OF THE STUDY

Although this study was carried out on a small scale, it may soon be replicated on a larger one.

RECOMMENDATIONS

All facets of society must be included and treated fairly in an education reform plan. Everyone who has the legal right to reside on state property must be granted access to high-quality education, and the state must guarantee equity. It might contribute to the reduction of social, economic, and gender inequalities in society both locally and globally.

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