



RESEARCH PAPER

Assessing the Knowledge and Engagement of Sustainable Development Goals through the Analysis of Educational Quality in Schools: Evidence from Pakistan

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ABSTRACT

In SDG, role of school-based quality of education and respective examinations play a significant role in the overall development and sustainability schools. School-based instructional quality and effective classroom management are tools that assess school students' academic performance in standardized tests administered by Examining Boards. SDG endeavours provide scores, interpretation of results and sometimes estimate a potential specialization field of students' skills and ability. This paper examines the extent to which SDGs are able to address the quality of academic performance of students in respective schools across Pakistan whether there was any significant relationship between SDGs and quality of education provided in the schools across Pakistan. The extent to which the SDGs can ascertain the quality of teaching and learning at schools was the major concern on the study. A questionnaire survey comprising items pertaining to the conduct of classes, instructions, classroom experiences of students in schools, benefits, challenges and problems in schools was used in the context of SDG 4. A non-probability sample of n =250 participated in the study. The study employed a survey and responses were coded per the qualitative research paradigm. 92% school teachers and 86% school students affirmed they found quality of school-based instructions and experiences of students were not up to the mark to test the skills and knowledge of school students through Board Examinations. Majority of professional teachers who teach students in schools believe that school cannot directly address the issues and challenges highlighted in SDGs with respect to quality of education. The study results were varied depending on the benefits, barriers and problems in each school. The study found that the SDG-based measures and the quality of education were not effective despite the fact that students take the standardized examinations in their respective Board Examinations.

Keywords: Assessing, Board Examinations, Engagement, Standardized Test, Sustainable Development

Introduction

SDG 4 has emphasized the quality of education in the global aspects as a result of an international forum seeking survival strategy and global unification as identified by the United Nations. Assessment Reform Group (1999) has categorically emphasized that a secondary school student's academic achievement and skills are tools that assess school student's individual potential and set of knowledge. School-based instructions in classrooms and tests often lack clarity and word length in the papers that deal with subjectivity. Pakistani school instructions and experiences given to students examinations provide scores, but not the realistic interpretation. Ahmad & Malik (2011) have also

reformed the examination strategies in a study dealing with the results and sometimes how to categorize students' tendency to specialize in a specific area. It is essential to study how these School Boards Examinations ascertain the quality of pedagogic experience for teacher and the students. The outcome measures provide the baseline data and the initial results may help in determining the performance measures of these schools across Pakistan. One level of data analysis leads to another unfolding various questions as to how these classroom experiences were organized and conducted despite the huge difference among school management and administration in both public and private schools across the country. Once the data obtained from these examinations are collected, the outcome measures can be used whether students have demonstrated change. Outcome measures also assess the reliable and credible justification of the performance criteria and rubrics given to the students in schools. There are categories of outcome measures in the context of sustainable development goals which are categories in the following categories:

Self-Report Analysis

This analysis leads to the issues and concerns that are reflected in the individual and organizational context. An individual education institution can take a lead to report how and why it can augment the quality measure to update not only the curricula, but also the relevant information to increase a sustainability drive. This may include parental participation, content-based activities and self-directed measures to increase quality measures within the organization. Organizational perspective and thought to increase the quality may reflect in their vision and mission statements. When this form of reporting is made mandatory for all educational institutions, there would be an ideal reform measures prevalent in the country.

Performance-based Analysis

In the context of sustainable development, this category of development and quality of education refers to the academic performance of students and professional performance of teachers in schools. When the teachers and students perform according to the standards and policy parameters, there would be an air of success and a culture of collegiality. This culture can be sensed through a rigid disciplinary code. Classes, attendance, time table, curriculum and examination policy can be addressed towards a rigid quality parameter.

School-Observer Analysis

When an independent body of observers selected on the basis of their expertise survey the school activities and teaching and learning standards, there would be a constant upgrading of the quality parameters throughout the schools in Pakistan. A list of such experts can be published to serve on board as voluntary members on annual membership basis. These members who would be prolific in their services can be selected through a rigorous search process. The bench mark set by the National Educational Council can lead to a critical review report of school performance and published on the school website mandatory of such purpose and developed as a policy measure.

Literature Review

An observational study conducted by Lebada, Ana Maria (2017) was to determine the extent to which the use of standardized outcome measures and perception regarding student's benefits could be effective. The study's purpose was also to examine factors associated with low quality of instructions in the examinations. The evidence showed that the most frequently reported reasons for not using such measures included length of time for students to complete examinations papers. The quality measures as suggested by the SDGs are not addressed effectively in the study. Adams and Barbara, (2016) raised concerns about length of time for teachers to teach contents and analyze the data and difficulty for

them in completing required inform independently. It concluded that teachers have to cover syllabus in due time in implementing their use routinely in most pedagogic settings. Based on the perceived barriers, alterations in practice management strategies and the instruments themselves may be necessary to increase their use according to Bissio, Robert (2016).

Cobham, Alex, Steven and Klees (2016) investigated the outcome measure used in sustainable developmental studies. A sample of $n=247$ professional school teachers were included (teachers=108 and heads=139) in this survey. Result showed that 74% response were achieved in which higher proportion of experts participated. It was concluded that out of the sampled participants, most professionals agreed that sustainable development goals were necessary to achieve effective results. Majority respondents were in favor of the measures and positive outcome measures were used for wide range of developmental purposes. Another study was a non-experimental cross-sectional survey study conducted by McGrath, Simon, Lesley & Powell (2016). The study determined the need for a sustainable development economic and financial property and solidarity. The result showed that 25% ($n = 1217$) observations used "always/often" by >60% of the participants, while most reported outcome measures were used by <15%. It concluded that most of the participants realized various strategies to use evidence-based scenarios for effective pedagogies was essential for sustainable development in raising the quality of education.

An observational study was conducted by Farooq (1996) that studied education system in Pakistan from the perspectives of challenges and issues to compare the reliability and responsiveness of the participants. Data from $n=168$ subjects with quality performance issues were used in the analyses. Results showed that reliability and responsiveness tended to decrease somewhat with increasing follow-up time. Thus the study concluded that educational measurement and evaluation may be used as a measure to increase the quality of education as advocated in the SDG 4 on quality education. The research instruments were able to appropriately measure development outcomes to examine change in the status of learners. Another study of standardized tests was carried out by a randomized sampling strategy by Gipps (2017). He studied the efficacy of testing parameters used by the developers of such academic tests. The second objective was to determine the correlation between important outcome measures used in this study. A sample of $n= 258$ teachers participated whose responses were recorded and interpreted with regards to education testing as a tool to increase reliability and validity of tests. Results showed moderate to strong correlation between the three outcomes measures, although a considerable number of participants gave a relatively low score for perceived benefit, while the research assistant gave a high improvement score for the main complaint and academic functioning. Graney & Hasan (1998) elaborated the significance of tests that help augment the quality of learning in educational institutions. Similarly, Harlan & James (2010) argued how quality of examination can determine the required standards through standardized tests administered across large population.

Harlan & James (2010) assessed the significance of quality of education imparted and the developmental strategies. Their work emphasized the elements that help improve the standards of a standardized tests. This research also highlighted the need of quality and assessment in educational institutions. Aras & Crowther (2008) worked on the sustainability and development model in corporate sector and viewed that a corporate world needs to annex itself with the realistic development and sustainable goals. Barr (2008) studied the effect of environment and society on the professional development of employees from a different angle. His view was that organizational survival depends not only on the external environment of the organization, but the internal mechanism of operation have a deep impact on employees' thoughts, set of beliefs and concepts. This connection is obvious in the context of school-based examination too. A large level standardized test is supposed to create a culture of inter-school harmony amongst the

school students, parent and teachers across the country if the national curriculum is fostered genuinely and professionally. There needs to be a system to introduce this philosophy into the testing system across various boards in Pakistan. Clark & Dickson (2003) worked on developmental and sustainability science. Their research developed a system of collegiality for effective survival and progression. This was upheld by French (2002) in the research on the role of state and the environment in being a sustainable organization. Global recycling process and organizational success were the key factors in the study.

Gruber (2012) discussed to a great extent how the sustainability and development impact organizational structure and growth in a specific context. The cultural aspects amalgamated with the social notions also have a deeper impact on an organizational sustainability and growth. This scenario seems to be perfectly poised in the context of quality of education imparted in schools and tested in the respective Board Examinations. Jackson (2009) elaborated an analytical perspective in this regard though global trend comparison. The study intervention overwhelmingly stresses that technological advancement of a country help its economic survival and sustainable growth. Countries rich with technological advancements are ready to embark on a journey of exploration for effective survival and sustainability towards a rigorous and vigorous world to live in.

SDGs and quality of school education are considered closely linked. The sustainable development goals in clued 17 significant goals for the member countries according to the UN. These goals are supposed to be reached and addressed through the curriculum reforms. Each reform process will require according to the capacity and manpower as well as the technological and technical resources. Jones, Comfort & Hillier (2011) have raised some questions in their study pertaining to the standardized structure of sustainability moves. This was supported by another study of sustainable development by the same researchers Jones, Comfort & Hillier (2014) as a follow up study. Another paper on CSR has also raised some issues on the standards and reliability measures in the work of Morhardt (2010). This study focused primarily on Corporate Social Responsibility. As a change agent in the social fabric, this concept has changed the structural appearance and looks of many national and international organization including Pakistan. The reforms structure and the developmental budgets within private operators across the country have increased tremendously specifically in the banking industry.

Educational reforms agenda in World Bank priority projects was another growing concern by many. This brought revolutionary changes in the quality of education and teacher training programmes across Pakistan. The concerns grew stronger and vivid when the 17 sustainable development goals were declared by the United Nations. This awareness and its relevant and pertinent components always remain as the source of inspiration quality for the people around the world. Newell (2008) took an initiative towards this development and sustainability. The researchers have been instrumental in the context of sustainable development for the past few year and this research has been the culmination of such endeavours. In this context Ramirez (2012) has elaborated a significant strategy. This led to a sustainability project that can utilize all natural resources to combat resilience and challenges in the face of sustainability issues. The work done in this research is similar to the research study by Rivera & Kurnia (2015) using ICT resources and technological advancements. This was promptly advocated by Sachs (2016) who agreed that ICT and technological advancements ae the two tools to augment the standards and quality of education in the context of sustainable goals.

Sachs, Modi, Figueroa, Machado, Sanyal, Khatun and Reid (2016) raised concerns over the quality measures at educational and organizational systems. Their research focused on the ability of an educational and other organizations to augment sustainability through a continuous development process. Healthy and competitive edge gives an organization an ability to perceive itself through the lens of quality and productivity at the

same time. Souter, MacLean, Okoh, & Creech (2010) have already supported the same phenomenon.

Material and Methods

Research Design

This study was based on an observational survey design which aimed to determine educational quality measures in schools across the country. Non-probability convenient sampling technique was used in this research with a sample of n=250. The teachers and administrators who had been serving in their respective fields for three years or above were selected to take part in the survey per the inclusion-exclusion criteria. The sampling criteria and other measures were taken into considerations. The researchers received a formal approval from the institution for the purpose of data collection. The investigators approached the participants who met the study inclusion criteria i.e., school teachers, management and administrators working in various educational organizations. Formal consent was sought for voluntary participation. Data was encoded and analyzed in a SPSS V22 software by inserting different variables in questionnaire in the form of frequency and percentage ratio. For the purpose of data collection, the investigators adopted the questionnaire from the previously done studies in the relevant Fields. The questionnaire demonstrated whether or not research samples had the similar exposure in the fields of quality measures educational context. The research instrument comprised thirty one close-ended questions and two open-ended questions.

Research Instrument

The instrument for the current research was the questionnaire and field observations. The items in the questionnaire include the following variables:

- School vision and mission
- Quality declaration of school
- School's teaching reform strategies
- Teaching license
- Teachers' experience and qualification
- Parental participation
- Professional workshops, training and seminars
- School-based research conference
- Teaching standards
- Provincial financial support
- Curriculum reform
- Professional competence
- Teachers' facilities and benefits
- Salary compensation
- Environmental safety and security
- Instructional framework
- Administrative excellence
- Managerial excellence
- Use of ICT and technology
- Rewards and awards to teachers
- Rewards and awards to parents
- Reliable and valid assessment strategies
- Personality development and self-esteem
- Guest speaker seminars and training
- Classroom facilities and resources

- Lesson planning techniques
- Special educational needs
- Effective human resources
- Professional appraisal system
- Administrative autonomy
- Managerial autonomy
- Transparency practices
- Open online access to public

The questionnaire was developed and discussed with the experts for their reliability and validity purposes. The forms of validity comprised face validity, content validity and criterion validity and construct validity. Concurrent validity was also the integral component of the instrument. Reliability measure was established through Cronbach Alpha whose table is placed under.

Table 1
Reliability Measure

No of Items on SDG	Cronbach Alpha	Sample Size
32	0.74	250

Sampling

Research samples comprised the random sampling of the participants from various schools including the heads, principals, and teachers. It is a subset of a statistical population in the research study. Randomly selected samples had the equal opportunity of being selected in the study. A sample of n=250 samples from various educational institutions was collected. Some of the ample responses were rejected as they arrived late or did not fill out the questionnaire adequately.

Procedures

For the purpose of reliability measure, the data of the samples n=250 was entered into SPSS V25. The data yielded a reliability index of 0.74. This measure was acceptable per the suggested index of 0.70 or 70% consistency amongst the respondents according to Jacob Cohen (1982). The items were presented to the respondents in written form in mail and in person both. A sample of n=17 were rejected based on the developed criteria and the scientific research protocol. For the purpose of data collection, the researchers developed a letter of invitation to seek required consent of the participants. The participants responded and filled out the required information on the questionnaire and sent back the filled forms in person and emails. Google forms were also used partially to collect the filled questionnaire. Prior to the data collection, instrument development process was discussed with the experts and a total of 32 items were finally approved and structured. After the pilot study had been carried out on a small sample of n=23, the Cronbach Alpha was estimated to be 0.74 on 32 items. The data was then collected from the samples from various organizations and schools. Data collection technique comprised online survey through Google form, emails and personal collection. The collected data was checked for their accuracy, clarity and conformity. It was ensured that the respondent had followed the instructions to fill out the data. Inclusion and exclusion criteria was revised and implemented on 17 rejected responses based on their inability to be counted as they lacked clarity of responses, were smudgy, were not marked correctly, arrived late or comprised ambiguous response. The samples was also checked for the adequacy and reliability using SPSS V24.

Results and Discussion

A sample of n= 250 participants completed the response questionnaire and the response rate was 97% whereas 49.6% of the participants were female and 50.4% were male participants. Majority of participant had practiced 3-5 (57.2%) years as full-time regular teachers and had clear idea of sustainable developmental plans introduced by the United Nations. 80% participant had professional exposure. 76.4% of the participant's highest earned degree was professional in the relevant fields, 33.6% of the participants' specialty certification was also in the relevant fields. Most of the participants (65.2%) were between the age group of 21- 40 years. Out of 250 (66.4%) participant managed mixed ability school students where it was mandatory for them to train and counsel students in post-teaching sessions. 43.2% of the participants were fully aware of the usage of ICT and web-based applications and software. The average work load was 28 periods out of 40 per week. The perceived benefits with using standardized outcome measures in practice among participants who used them was obtained. More than 82.3% of the participants agreed that standardized outcome measures could enhanced professional communication between teacher's students and parents. 81% participants indicated that they helped the institutions to develop sustenance models and survival through continuous efforts. 6.5% of the participant disagreed with the idea that only the school management can play a role in the school development plans. Problems in filling the questionnaires with was also considered while compiling the results. Out of 250 participants, (45.3%) agreed that they took a long time to complete. 69.8% participants somewhat agreed that they took time to analyze the score. And 43.5% of the participants disagreed that they did not get complete well in time hence could not give information about response to treatment. These results were similar in nature to the study by Tonga, Subramanian & Arunachalam (2005).

Recommendations

The study recommends that SDG 4 must be implemented in the curricula gradually in all secondary school classes across the country. The paper also recommends that newly appointed teachers in JSTs and PSTs must be trained in the context of SDGs prior to their induction in the schools as full-time regular teachers. Policy parameters must include clauses in which school performance must be done through an external body of intellectuals equipped with such exposures for the effectiveness and sustainability across the schools in Pakistan.

Discussion

More than 93% of the participants reported that they felt standardized measures for sustainable development was integral and indispensable. They are required to develop schools according to demand-led strategic actions and policy. Only a small proportion of participants indicated they did not use outcome measures for developing school plans. In this study, male to female ratio was 50.4% and 49.6% respectively. The use of standardized development measure was variable with greater number being used in privately owned schools. Previous studies also suggested that schools with years of experience, professional degree and pedagogic specialty had a high probability of using standardized outcome measures for a higher rate of sustainable development. In a study, administrators and academic managers working in at a private school facility reported that they used them in their professional development practices. Experts also reported that among school heads, who participated in the study used outcome measures for sustainable development for long-term professional benefits. Majority of the participants in the survey managed the low standards of development and pertinent conditions. 65.2% of the participants in the survey managed the students in formal classes aged between 21-40 years. 82.3% of the participants who used outcome measures reported that they perceived benefits from it as planned measures to develop schools education quality enhanced the communication between teachers and students.

Some of the participants reported problems using outcome measures in their practice and 45.3% of participants reported that students took too long to complete a scholastic task. Previous studies also indicated this problem while ratio was fairly high for the factor that they were confusing to the students. Some students reported that language was the barrier. Minority of the participants reported that they did not use outcome measures as they were not relevant because the practice mainly included consultation, case management and discourse analysis and planning only.

Conclusion

Multiple researches were done on outcome measure for effective sustainable development implementation and the results were varied. Most of the participants in the study had reported that they used the standardized outcome measure in their school practice. Most participants who used standardized outcome measure reported that it enhanced communication between administrators and the parents. Meanwhile some of them reported that it took too long, required more effort than it's worth and cost high. A much needed awareness and educational program should be implemented so that there would be more usage of standardized outcome measures in future for sustainability, effectiveness and productivity.

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