Applying psychological science to improve the teaching-learning process and promote educational success in Bangladesh: Role of IER in research, practice and future directions

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Abstract

The department of Educational Psychology and Guidance (EPG) has been serving as a key research, education, and training provider from the very inception of the Institute of Education and Research (IER). The department of EPG contributed to policy formulation for child-friendly education through advocating, developing, and adopting innovative practices through research and building capacity through education and training. The study begins by looking at the research landscape of educational psychology in Bangladesh. The study analyses trends of psychological research in education in the last six decades. It also investigates how EPG contributes to imparting the cross-cutting knowledge of educational psychology and developing a skilled workforce over time. Further, it examines how EPG graduates contribute to the field of education in practice. Based on this analysis of research and practices in Bangladesh, some future directions are to be put forward about how the Department of Educational Psychology and Guidance of IER will play a vital role in enhancing the quality of teaching-learning in educational practices in Bangladesh.

Keywords: Bangladesh, educational psychology, research trend, educational policy, educational practice

Introduction

With a mission to facilitate advanced research in education, the Institute of Education and Research (IER) begins its journey as one of the first Institutes of Dhaka University. It was a joint effort of the University of Dhaka, USAID and the Colorado State College (later the University of Northern Colorado). From the very beginning, Educational Psychology and Guidance was offered as a major (30 credits for one year and 42 credits for two years) of M. Ed. Programs (Prospectus, 1964).

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Department of Educational Psychology and Guidance (EPG) of the University of Dhaka thus, was the first department dedicated solely to the study of Educational Psychology. However, earlier educational psychology has been taught as an integrated subject in the psychology departments in different universities and teachers' training institutes (e.g. TTCs) in the country (Hossain, 2021). EPG has been serving as the critical research, education, and training provider from the very inception of the Institute of Education and Research (IER). The department contributed to policy formulation for child-friendly education through advocacy, developing and adopting innovative practices through research and building capacity through education and training. In this study, we will explore how EPG contributes to applying the scholarship of psychological science to improve the teaching-learning process. In doing so, we will analyse the research landscape of educational psychology and explore the role of EPG in disseminating psychological knowledge and developing the workforce to enhance the quality of educational practices in Bangladesh and its commitment to sustainable development goals.

Objectives

The present study aims to critically review how and to what extent IER contributed to the research, education, and training in psychological science to improve the teaching-learning process and promote educational success in Bangladesh. The following objectives guide the study.

1. To analyse the trends of psychological research conducted and published by IER since its inception (1960-2019).
2. To investigate the role of EPG in imparting the cross-cutting knowledge of educational psychology and developing a skilled workforce over time.
3. To examine the extent to which EPG graduates contribute to the field of education in practice.

Methodology

The study is quantitative in nature and employed a document analysis methodological approach to answer its three research questions. A scoping review approach was followed to answer the first research question, which aims to analyse the trends of psychological research conducted in IER. For the second research question, which investigates the role of EPG in developing the workforce, a narrative review of the EPG departmental curriculums developed between 1951-2021. We also developed a student database and small-scale survey with EPG alumni to answer the third research question to explore the scope of their contribution to the field of education through their diverse professional roles.

The scoping review approach was informed by Arksey and O'Malley's (2005) used to identify the available literature, selecting studies, charting data and collating, and reporting the results. The following section describes each of these steps briefly.

Identify the literature

To examine the trends of psychological research from 1960 to 1919, we have selected three sources of data; i) dissertations conducted by regular EPG MEd (One-year, full-time) students; ii) dissertations conducted by EPG students from professional MEd (Two year- parttime), MPhil and PhD programs of IER (It should be mentioned that the professional MEd program runs parallel with regular MEd and caters to those who do not possess a four-year BEd degree from IER or those who are in full-time employment) and iii) research articles published by *Teachers' World, Journal of Education and Research*, an IER publication (published from 1961 to 2019). Earlier a review article (Habib & Hossain, 2010) was publsied on trends in educational research from 1961 to 2010 and the present study extended the review to 2019.

Study selection

In this stage, we selected relevant studies from the studies identified in the first stage. We read through titles and abstracts to eliminate duplicates and exclude ineligible studies. Initially, we identified 164 (123+41) dissertations and 146 articles. Ten dissertations were excluded due to duplication resulting in 154 dissertations. Altogether 300 studies, including dissertations (n=154) and articles (n=146), underwent the title and abstract screening. The screening phase excluded 59 dissertations and 120 articles. About 121 studies (95 dissertations and 26 articles) were selected for a full-text review against study selection criteria. Studies were included: if any one of their keywords falls under the topic category of selecting research in educational psychology developed by Hossain and Habib (2014); if the study included students, teachers, counsellors, and parents as samples; and if the study applied the scholarship of psychological science (e.g., theory, intervention, and measures) to improve the teaching, learning, or optimal development of students in the context of the educational institutions; or if they developed or adapted a psychological measure to assess any psychological phenomenon; or if they expanded or adapted a psychological intervention to improve the teaching, learning, or optimal development of children in the context of the educational institutions. Articles were excluded if they were nonempirical (e.g., Commentary, policy analysis, and literature/book review), included a sample from the general population, and employed the scholarship of psychological science within the public life context.

We reviewed the 95 dissertations and 26 articles against the inclusion and exclusion criteria. We resolved the difference and confusion in our decisions about selecting an article and dissertation via discussion. Cohen's kappa coefficient (κ) of interrater reliability was 0.82, indicating a robust inter-rater agreement (McHugh, 2012). Finally, the selection stage yielded 95 dissertations and 17 articles, with 22 papers from the previous review added, combining the total number of studies as 134 (Figure 1).

Charting the data

We charted articles by extracting relevant information based on a Paper Classification Form (PCF) (Hossain & Habib, 2014). The PCF includes six components: research setting, design, sample, sampling technique, data collection tool, and analysis method. We also inductively coded the selected papers to chart the type of terminologies they used to describe a psychological phenomenon. Then similar codes were grouped to form sub-themes and overarching themes. Intercoder agreement via Cohen's kappa coefficient (κ) was 0.92.

Collating, summarising and reporting results

A qualitative content analysis technique was used to summarise and synthesise the data. We produced numerical summaries to map the overall number of studies, settings and methodologies. For presentation and reporting, we used graphs, diagrams, and tables.

Figure 1

Flow diagram of search results
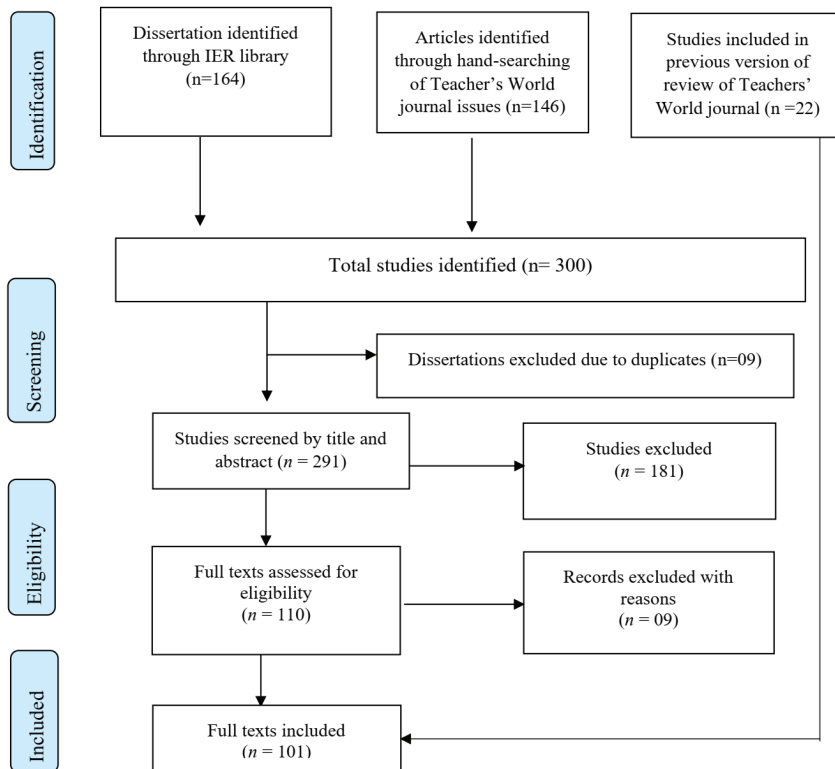
Findings and Discussion

The study findings are discussed below in light of the three research objectives.

Trends of psychological research in education

Psychological research publication increased over time

The overall trends of psychological research (in terms of the number of MEd dissertations generated and journal articles published) indicate that the high share of psychological research at the beginning decade of IER had a rapid drop and bottomed out for the next 30 years till a sharp rise in the 2010s. The research trend began in the 20s represented several dissertations completed by students of the EPG MEd (One-year full-time) program. IER started offering a regular MEd program after passing out of its first batch of undergraduates (Bachelor of Education program 1994-95 session). Currently, these programs are the flagship program of IER. Hence, it is not surprising that the number of dissertations in the One-year MEd (regular) program outnumbered. The last decade witnessed a sharp increase in the number of dissertations reaching its peak of 36, seven times higher than the previous figure five. The program's expansion, growth in the number of students, and facilitation of psychological research might have influenced such a proliferation of dissertations.

A fluctuating but the increasing trend was also found in the frequency of psychological research published in the Teacher's World. The number of published articles was only five during the 60s, which increased more than thrice to 17 during the last decade.

Figure 2

Frequency of psychological studies across the past six decades
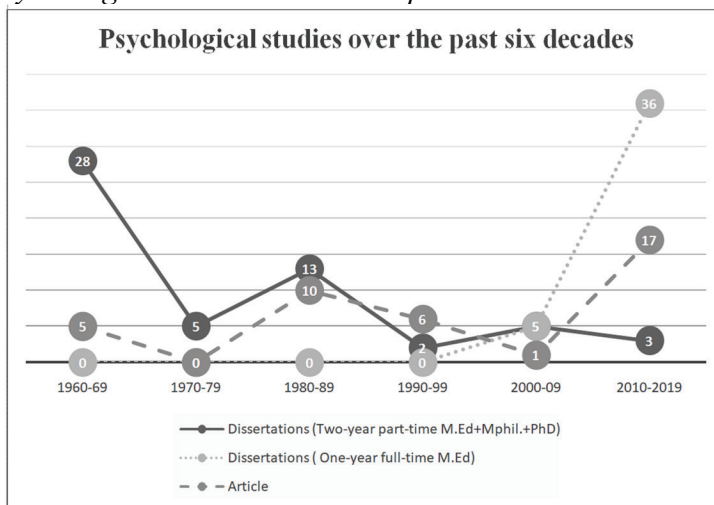
On the contrary, the number of psychological research dissertations from different programs including, professional MEd (Two-year part-time), Mphil., and PhD programs decreased over the past six decades. However, the number of dissertations produced by MEd professionals was the highest during the 60s (N=28), which decreased over time and shrank to three in the last decade. The lack of motivation for undertaking research, prioritising a fast certification or merely fulfilling service requirements may cause the declining trends of research initiatives by the students from the professional MEd program.

Academic achievement, learning attitude and aptitude remain major areas of research

The trend of the research focus over time in terms of their frequencies shows that some research topics emerged with time while some were wiped away (Figure 3). For example, Norm development for standardised tests was a topic of research interest during the 60s, but no research in this area was found in the later decades. Similarly, Adolescent needs, cognitive development, and guidance service were not found after the 80s. Further, the earlier decade of the 60s centred around aptitude, intelligence, and personality trait measurement. On the contrary, later decades, particularly the last decade, witnessed a range of diverse research focus. Various new research interests emerged in the previous decade, including student engagement, social-emotional development, belonging, academic efficacy, motivation, stress and behaviour. Among the newly emerged areas, studies focusing on students' behaviour outnumbered the others and investigated problem behaviour (Tuli, 2019), prosocial behaviour (Shirin, 2018), bullying behaviour (Tritha, 2019), and hyperactive behaviour (Sultana, 2016).

Figure 3

Trends of research focus over the past six decades
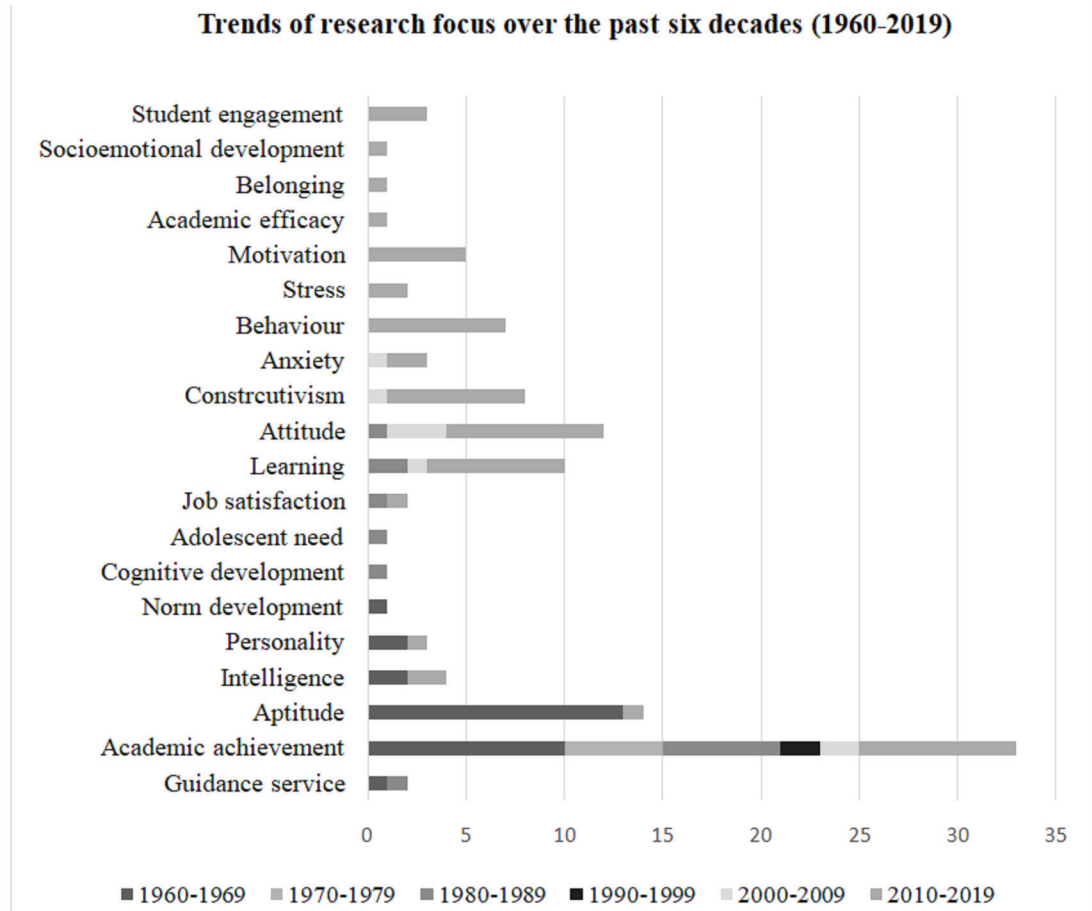
Constructivism was another area of research interest that emerged during the 20s and flourished in the last decade. During the beginning of the 20s, Habib (2000) investigated constructivism in primary school teaching. Along with constructivist teaching, studies focused on constructivist learning (Mus), constructivist learning environment (Sarker et al., 2010), and constructivism in inclusive settings (Rony & Awal, 2015) in the later decades.

Academic achievement continued to be a consistent area of research interest over the past six decades. However, the research interest regarding shifts in academic achievement changed. The analysis of the studies revealed that researchers were interested in measuring achievement through direct measures such as standardised achievement tests in the earlier decades but

tended to use the proxy measure of academic achievement such as grade point average in later decades. Further, in the last two decades, the focus has shifted from measuring achievement to exploring its relationships with other variables such as math anxiety (Syed, 2011), parental style (Wahed, 2011) and teacher-student relationships (Khondokar, 2010).

Quantitative research remains ahead of other research methodologies

The dominance of the quantitative research method over the decades is depicted in Figure 4. Until the 70s, no study was found employing other than the quantitative methods. Only one study by Sultana (1981) was found using a mixed method during the 80s, whereas the rest (N=22) were quantitative. Despite the sole dominance of quantitative methods in psychological research, a significant increase in other methodologies qualitative (N=12, 22%) and mixed-method (N=17, 31%) was found in the last decade.

Figure 4

Trends of research focus across the past six decades
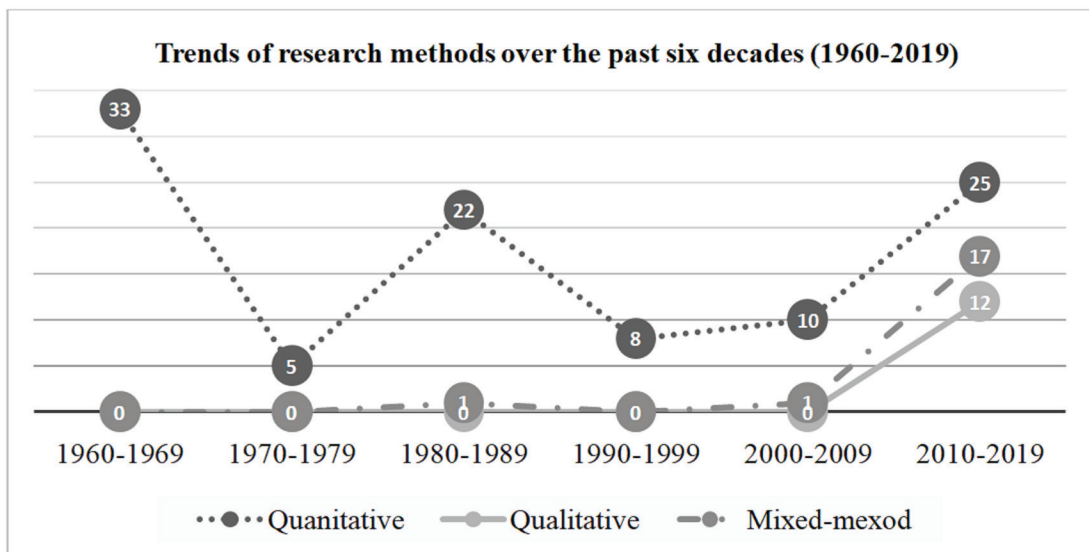
Tests and scales dominated in psychological research. The research instruments such as tests and scales were the most used research tools over the past six decades. During the 60s, most of the studies tended to use Tests as the research instrument. About 28 of the 35 studies, which counts 80% of the total studies between 1960-69, used different standardised tests to measure aptitude, intelligence, and achievement. The most frequently used ones were the Differential Aptitude Test (DAT) (e.g., Saeed, 1963), School and College Ability Tests

([SCAT]; Khatun, 1965), California Test of Mental Maturity ([CTMM]; Quader, 1966) and Passlong test (Perpetua, 1965). As the tests were American standardised, the researchers took a huge interest and put effort into adapting them and evaluating their effectiveness to be used within our cultural context. Additionally, the adaptions of American standardised scales like Edwards Personal Preference Schedule (EPPS) (Khanum, 1965) and Minnesota Teacher Attitude Inventory ([MTAI]; Baroya, 1962) also grabbed some researchers' interest. Given that the Americans established the IER, the American testing movement might have influenced and shaped the psychological research trajectory in education in the 60s. Further, during that period the Department of Testing and Guidance of the East Pakistan Educational Guidance Council, set up by the Directorate of Education of the Government of East Pakistan had been attached to the Institute of Education and Research (IER Prospectus, 1965). This might also have influenced the testing biases of psychological research interest during that period.

Figure 5

Trends of research instruments across the past six decades
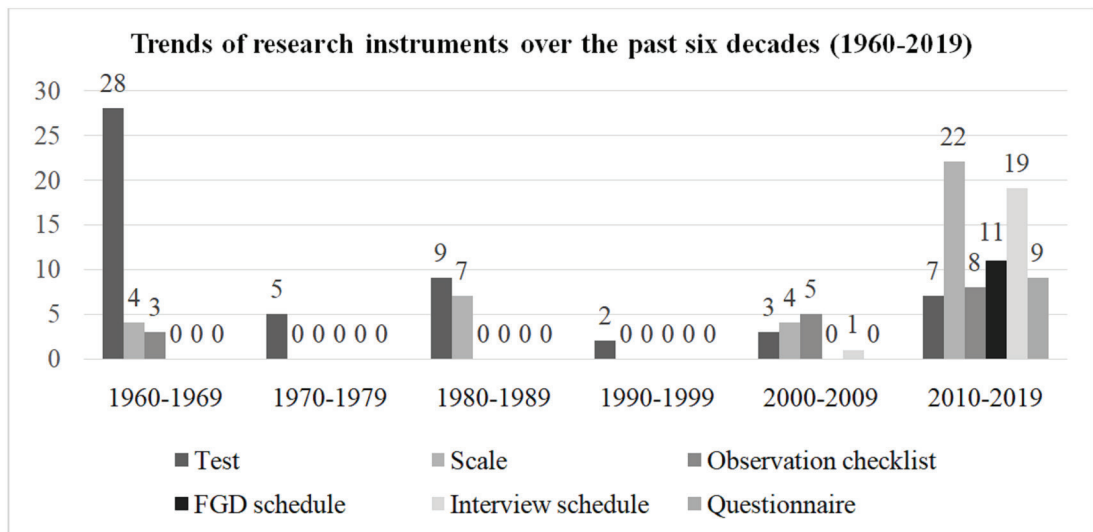
The influence of tests continued until the 90s when most of the reviewed studies used, adapted, and developed different types of achievement tests for measuring language comprehension skill (Baiargee, 1975), cognitive skill (Dash, 1988), and subject-based knowledge of Population Education (Begum, 1979), Chemistry (Haque, 1977), and Educational Psychology (Chowdhury, 1986). Additionally, a few scales were developed to measure attitudes towards the inclusion of counselling and guidance services in Madrasha (Khatun, 1989), learning environment (Nisa, 1984), and job satisfaction (Bashar, 1985) during these decades of the 70s, 80s, and 90s.

Whilst the early influence of the test decreased, the dominance of scales significantly increased during the last two decades (2000-2019). About 22 of the 76 studies compounding about 30% of the total studies employed scales in the last decade. These scales were mainly Likert-type and used for measuring the attitude of teachers, students, and parents about various researched phenomena such as corporal punishment (Sultana, 2011), bullying (Toma, 2019), and sex education (Rajib, 2015). Additionally, some studies used different standardised scales such as the Strengths and Difficulties Questionnaire ([SDQ]; Goodman & Mullick, 2001), the Psychological Scale of School Membership ([PSSM]; Goodenow, 1993), and the Student Engagement Instrument ([SEI]; Appleton et al., 2006). Studies used scales for measuring different psychological constructs such as problem behaviour (Hossain, 2011), classroom anxiety (Rahman & Mahmud, 2010), depression (Sultana, 2017), academic self-efficacy (Barsa, 2019), and learning style (Islam, 2019).

Further, with the emergence of qualitative and mixed-method research, research instruments such as interviews and Focus Group Discussion (FGD) schedules significantly increased during the last decade. About 30 of the 76 studies, which counts 40%, use individual or group interview schedules. Additionally, many (N=8) studies used different qualitative and quantitative observation checklists, which remained absent after the 60s and remerged during the 20s.

Role of IER in imparting the cross-cutting knowledge of educational psychology

In this section, we will discuss the role of IER in imparting the cross-cutting knowledge of educational psychology through its diverse programs and activities. Our discussion centres on three key themes: academic program, curriculum, and training.

Academic program

Since its inception, IER has been imparting cross-cutting knowledge of psychological science through different post-graduate level courses under the Educational Psychology and Guidance (EPG) department. Initially, IER provided a one-year Master of Education course for students with a Bachelor of Education degree and a two-year for those with a bachelor's degree other than education.

Later, IER expanded its academic program and introduced the Bachelor of Education (Honours) between 1994-95. To keep in line with its Bachelor of Education programme, IER has started a one-year Master of Education program. Though the four-year Bachelor program is limited to Science, Social Science, Language, and Special Education streams, Educational Psychology has been taught as a professional core course compulsory for all stream students. Students from any stream with a bachelor's in education can enrol in the Master of Education in Educational Psychology and Guidance. Further, in 2017, IER expanded its academic program for Educational

Psychology by starting the MPhil program. Currently, IER offers the scholarship in educational psychology through a One-year Master of Education (full-time), Two-year Master of Education (part-time), MPhil and thesis-based PhD.

Curriculum

The curriculums of different departments of IER serve as a vehicle for disseminating cross-cutting scholarship in various specialised fields and developing a skilled workforce in multiple areas of education. Similarly, the EPG curriculum has played a critical role in imparting updated psychological theories, innovations, and evidence-based practices and equipping students with the necessary knowledge and skills to cope with the global standard.

Since its inception, the post-graduate courses of EPG included: Principles of General Psychology, Child Development and Adolescent Psychology, Educational Psychology, Mental Hygiene and Emotional Adjustment, Principles and Practices of Guidance, Techniques in Group Guidance, Occupational Information and Analysis in Vocational Guidance, Counselling Techniques, Psychological Foundation of Education, Psychology of Individual Differences, Trends and Issues in Educational Psychology and Guidance, Principles and Practices in Testing and Measurements, and Standardised Instruments for Group Measurement, and Descriptive statistics. Besides this subject-based coursework, there were research-focused seminar courses designed to equip students with research skills in educational psychology. There were also opportunities for gaining practical work experiences such as case studies, counselling, administration, scoring, and profile test data through the Practicum course.

Given that curriculum is never static and keeps changing, IER also has undertaken various revisions of its curriculum. EPG's curriculum also underwent multiple changes, modifications, and up-gradation over the years to reflect the current and future needs of students and society at large. Many previous topics were wiped away, whereas some early courses merged into one course in later decades. For example, there were previously separate courses for educational guidance and counselling, which were later merged into one course named Educational Guidance and Counselling. The overall shift from the concept of educational guidance to the concept of educational counselling might have reduced the overall weight of guidance focus courses in the curriculum. Additionally, the heavy emphasis on psychometrics was not seen later in the curriculum as the early four courses were merged into one course named Psychological Testing and measurement. This might also have influenced the overall psychological research interests as the adaptation and usage of standardised psychological testing significantly decreased over the last two decades and lost its golden heritage of the early 60s.

Furthermore, many new topics are added over time. EPG has been a pioneer in introducing new concepts to its curriculum that was never taught before as part of the teacher education program. For example, for the first time, EPG introduced the neurobiological basis of human behaviour in general and learning in particular to its Master of Education curriculum as part of

the educational psychology course during the 80s. Since then, it has been taught in the Master of Education program and later in the Professional core course of educational psychology in the Bachelor of education program. Now brain-based learning is a well-acknowledged topic in the teacher education program.

EPG also updated its curricular contents with topics that emerged with the national trend of educational development. For example, during the 90s, the government of Bangladesh introduced Multiple Ways of Teaching and Learning (MWTL) to enhance the quality of primary education under the IDEAL (Intensive District Approach to Education for All) project (Ellison & Rothenberger, 1991). Given that the foundation of MWTL was multiple intelligence theory, EPG has incorporated this theory into its educational psychology course to develop the workforce with the necessary theoretical knowledge.

The curriculum of EPG reflects not only the national development but also the international developmental trend of education. For example, with the global shift from behaviourist to constructivist learning, EPG incorporated social constructivism and humanism learning theories into the curriculum during the 90s. In the last curriculum revision in 2020, the trending learning theory of connectivism was included, keeping in line with the advancement of the global scholarship of educational psychology. Further, the current curriculum revision also reflects the cross-cutting dominance of the strength-based approach to education over the traditional deficit-based approach worldwide. Since 2000, the emergence of positive psychology has influenced the trends of psychological research interest and introduced various concepts relevant to the strength-based viewpoint of Education (Csikszentmihalyi, 2014). Not to mention, EPG has introduced and incorporated relevant topics from positive educational psychology such as positive education, resilience, and well-being into its curriculum.

Training

The IER is also a pioneer in conducting short course training for teachers under the banner of Dhaka University. It provided a short course on effective teaching for schoolteachers through the department of EPG, collaborating with Highland Resource Career College during 2005-2008. The short course helped equip teachers to teach effectively with necessary educational psychology theories and their classroom application in practice. The program successfully trained over 100 teachers during that period and opened doors for similar short training courses to develop a skilled workforce.

Contribution/Achievement of IER in developing a skilled workforce.

At the outset, IER of the University of Dhaka seeks to develop an effective teaching workforce and professionals in the field of education in addition to developing and improving advanced research facilities in education (IER, 2022).

Students graduated over the last 40 years

IER has been offering post-graduate degrees in Educational Psychology and Guidance since its inception. Initially, the program was limited to providing advanced professional knowledge for in-service teachers and educational professionals. Later, IER expanded its program, went beyond teacher training, and emerged as an apex institution providing advanced knowledge in the discipline of education. With the expansion of its program, the number of graduates has increased. Due to the unavailability of data, the total statistics of EPG graduates of the last six decades could not be documented. Hence, we have relied upon the available data of students who graduated from one-year (MEd-regular) programs under EPG, and IER. Figure 6 presents the number of EPG graduates at the IER over the last 20 years.

Figure 6

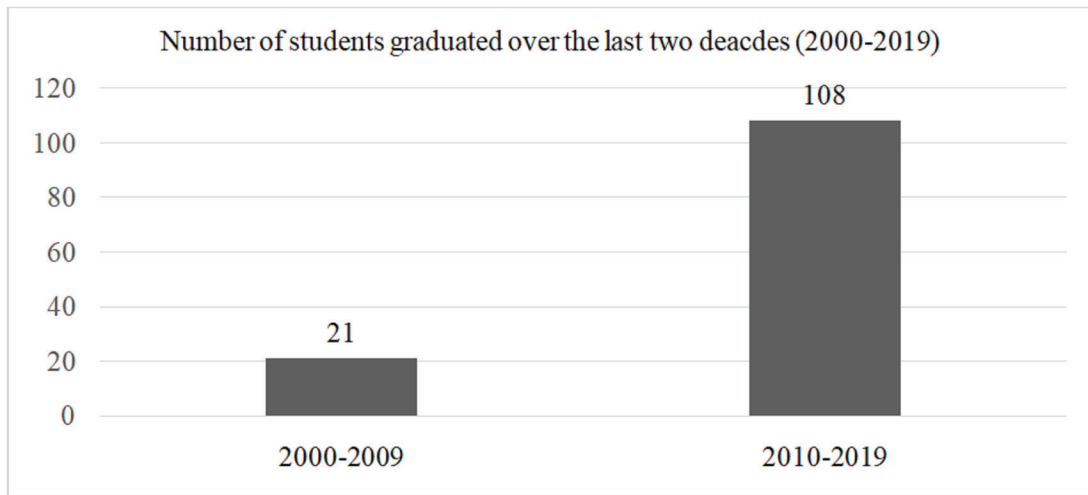*Number of EPG graduates at IER over the last 20 years*

Figure 6 shows that the EPG has grabbed students' attention over time. The significant increase in the number of students during the last decade, which is about five times that of the previous decade, indicated an increasing trend among students opting for Educational Psychology and Guidance in the Master of Education program. Further, the overall expansion of the academic program and growing awareness and opportunities for education as a separate discipline also influence such an increasing trend.

The extent to which IER graduates are contributing to the field of education

The scope of the contribution of IER graduates to improve the quality of education has increased over time. This section will specifically focus on the range of fields to which

students of educational psychology and guidance contribute. Figure 6 depicts data collected from the mini-survey with EPG alumni. It shows that a quarter of the respondents reported their involvement in the teaching profession. They are in teaching positions at different public (e.g., Dhaka University, Chittagong University, and Bangladesh University of Professionals) and private universities (e.g., Green University and BRAC University). Some are involved in school-level teaching. Some served the government primary schools as teaching fellows of Teach for Bangladesh (TFB).

Next to teaching is research with 22% of the response rate. EPG alumni are contributing to advancing new knowledge through conducting psychological studies both locally and globally. Another flourishing area where EPG alumni are contributing is Psychosocial counselling. Since the Rohingya influx in Bangladesh in 2017, EPG alumni are successfully providing psychosocial support through counselling and capacity building. About 10% of alumni have contributed through content writing on relevant topics of psychological interest, such as the Adolescent Girls' Club Module, art-based learning, and parenting. Many alumni (8%) implement different education programs targeting early childhood development, socio-emotional development, and children's mental health run by various NGOs (e.g., Save the Children, BRAC, and Plan International). Some are engaged in teacher training (6%) and material development (6%). A few alumni mentioned contributing through their diverse professional roles like data scientist, curriculum specialist, learning support facilitator, and child protection officer.

Figure 7

Range of professions through which IER graduates are contributing to education

Range of professions through which IER graduates are contributing to education
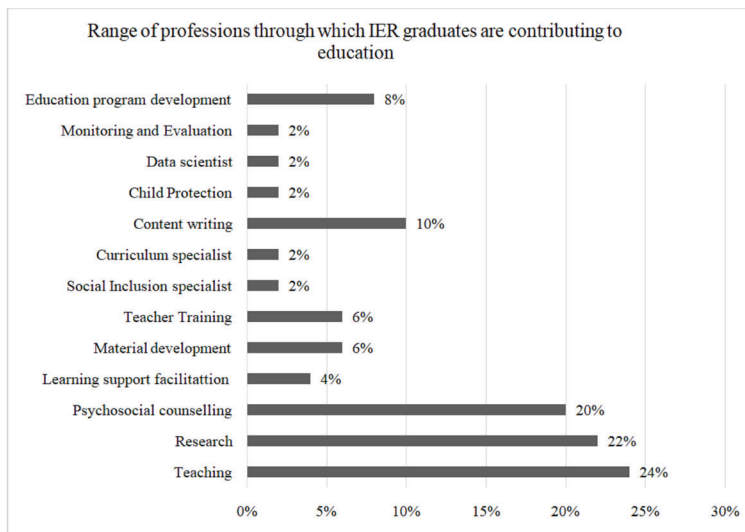
Way forward

This study has briefly outlined the contribution of IER in applying psychological science to improve the teaching-learning process and promote educational success in Bangladesh. In this regard, EPG has played a critical role in advancing psychological scholarship in education through research and developing the skilled workforce through teaching and training. To continue the legacy of past contributions, several concluding points for the way forward from the lessons learned over the six decades can be identified. For example, students enrolled in the part-time MEd program should be equipped and encouraged to opt for research as a significant decrease in the number of dissertations was found among these students. Many part-time students are in-service teachers, school administrators, and curriculum developers. Equipping them with adequate skills and involving them in psychological research will not only contribute to the existing workforce of the educational industry but also pave the way for evidence-based educational practices.

Research focusing on the development and adaptation of psychological tests should be emphasised. The importance of psychological testing cannot be denied, and EPG has a legacy in adapting, validating, and standardising various psychological tests for assessing achievement, aptitude, and intelligence. However, a decrease was found in terms of using psychometrically sound measures for measuring different psychological constructs. For example, achievement scores are used as a proxy measure of achievement instead of achievement tests. This may fail to provide accurate measurement and capture the nuances of a construct to be measured.

Opportunities for short-term training programs should be created to cater to those not enrolled in long-term programs. Such training strengthens the partnership between the university and industry and serves as a branding for long-term programs.

Avenues of international collaboration for knowledge sharing and resource building should be explored—for example, conferences, and training programs in partnership with other international universities and industry partners. Inviting visiting faculty from different parts of the world could also be a way of collaboration, given that we live in the era of globalisation. We cannot grow and aspire for innovation in isolation. International cooperation is relevant and required to keep us updated with the global trend and contribute towards sustainable development.

Finally, more emphasis should be placed on strengthening local collaboration so that we can build upon each other's strengths and come up with holistic efforts for the successful implementation of psychological knowledge to improve the quality of education in Bangladesh.

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