

Valuing a multi-voiced perspective on comparative urban Bangladesh physics learning experiences

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A neo-culture of extra-curricular coaching prior to sitting the terminal exam was once the privileged domain of public education systems in the Eastern world, but this is no longer the case. This multi-phase study based on a grounded theory approach considered a diversity of physics learning experiences of students and alumni from two urban private schools, an extra-curricular coaching center, and a private tutor in a developing South-Asian country.

There are various types of tutoring available for students in South Asia as listed by their main characteristics (deCastro and deGuzman, 2012). 'Lean on' is for low-achieving slow learners providing hidden remedial activities by school teachers and are usually unregulated. 'Pass on' is for students with busy parents, or those lacking assistance with school work. This second type of tutoring provides supplementary activities by school teachers as well as small-scale institutions regulated as a business and an academic entity. 'Ride on' is for both high and low achieving students whose parents can afford tutorial fees. This type of tutoring provides structured remedial and enrichment activities by multinational institutions, experts in the field, and university students and are regulated as a business and academic entity.

This study collects evidence to explore the nature of physics students' learning experiences in two seemingly different environments. The learning experiences in a private English medium school (PEMS) classroom with an established curriculum are compared to the supplementary and extracurricular instruction available in coaching centers (CCs) and Private Tutors (PTs). We utilize a multi-voiced perspective, through a prism of five lenses. Instead of solely relying on one theoretical approach, the researcher intended to grasp the reflections from the five different perspectives of a group of voices through constructivist learning environment (CLE), brain based learning (BBL), Social Learning theory (SLT), Principles of learning (POL), and student voice (SV). Excerpts are widely used from interviews, chats, and

discussion. Extensive referencing is used to understand the nuanced voices through the prism.

The study spans four phases across two 16-week periods using both online and face-to-face field survey methods in order to capture the largest possible picture, which has not been identified by mainstream researchers in education. This was challenging and so novel that following similar studies was not quite an option. The learning experiences in Physics discussed by students and alumni here are to be understood and interpreted as indicative of a more broad description of a larger educational experience. These experiences help to alter oneself more in line with meaningful learner and in its transformational essence.

The participants ranged in age from 14 years to 28 years. Phase 1 of the study consisted of a pilot study with online participants who were recent alumni who had recently taken their formal Physics exit exams. Clinical interviews and moderated focus group discussions identified nine emerging themes: (i) negative feelings about current education system, (ii) mixed views on coaching outside and beyond school, (iii) negative attitudes about being an O and A level student in urban Bangladesh, (iv) truth about article by Imam (2010), (v) negative views on society's influence and local culture about education in Bangladesh, (v) mixed views on extra-curricular activities and physical activity during teenage years, (vi) comparative views on learning experiences in schools versus centers and private tutors, (vii) role of novice versus experienced teachers in helping students successfully prepare for exams, and (viii) that the expenditure of money for coaching and tutoring does not always result in higher test scores.

In phase 2, the participants were selected based on the first phase of the study using a theoretical sampling strategy most closely related to studying the emerging themes. The second phase of the research involved interviewing a sample of 10 alumni face-to-face to engage in conversation with the participants who were most likely to help confirm or disconfirm the findings from phase 1. Although similar questions were used during the interviews, the researcher avoided asking the participants directly about their meaningful learning experience and tried getting it out by making them describe lessons for specific topics and what they learned and understood.

The emergent findings are a result of a five-faced prism where each idea reflects off another. Namely the five faces and perspectives are: (1)

Student Voice (2) Social Learning Theory, (3) Constructivist Learning Environment, (4) Principles of Learning and (5) Brain-based Learning. Study phases 3 and 4 focused on establishing the veracity of the previously identified themes through member checking and further act as an audit trail to validate the work being done over a span of the study at multiple sites. The findings from all the data were analyzed using a theoretical framework of continual interaction and constant comparison among new data with the prior to come to the development or evolving of the unique themes in this study. These findings suggest that a rapidly growing phenomenon of extra-curricular coaching beyond school prior to exams widely exists as early as sixth or eighth grade, sometimes at the cost of cutting back on in-school time. The data further indicate that participants strongly believe that neither coaching nor school learning experiences provide sufficient learning opportunities alone. Moreover, the data suggest students who believe they learned well in both cases are seemingly themselves diligent and perseverant, while those participants who say only centers helped more had self-reported weaker foundation skills. Moreover, most participants agreed that extra-curricular for-pay coaching centers should not be a necessary addition to school-based education.