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In support of our mission, there are no fees to submit or publish manuscripts so that cost will never be a barrier. Typeset and graphics are intentionally simple in order that the journal can be more easily accessed on a variety of devices worldwide to fulfill the mission of the journal.

I hope that the practices discussed in this journal will be helpful to you, our readers.

Sincerely,

Ann Cancilla Gaudino, Ed.D., Founder and Editor-in-Chief
eejeditor@gmail.com

With gratitude to our reviewers who serve the journal:

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Unravelling the Peculiarity of Dropout Trends in Indian University Engineering Programmes: Insights Inspired by the Movie 'Three Idiots'

Lim Keai

Abstract

This study was inspired by the Indian movie ‘Three idiots’ and purposed to investigate the reasons behind the high rate of engineering degree programmes dropouts in India. Accordingly, factors related to academic, demographic, economic, family, future, institutional, personal, and social were derived and examined on their impacts on student attrition rate. The study addressed two fundamental questions: what factors contributed to the high dropout rate, and how could the likelihood of a student dropping out of the programme be predicted? The research involved 101 participants who were familiar with or had gone through the Indian education system. The collected data were first checked for validity and reliability using Confirmatory Factor Analysis (CFA) with SmartPLS before conducting Multiple Linear Regression analysis to compare various factors between students who persevered and those who dropped out. The results indicated that academic, institutional, and social factors significantly influenced student attrition rates, although individual students' reasons for dropping out were unique and varied.

Keywords: Confirmatory Factor Analysis, CFA, engineering dropout rate, Three Idiots, Retention, Predictive Model

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Introduction

Background

The popular Indian movie *Three Idiots* set in 2009 highlighted the popularity of engineering as a career choice in India, leading to an increase in the number of engineering institutions available (Times of India, 2017). In 2006 alone, more than 23,000 students graduated with an engineering degree. This trend may be attributed to personal aspirations or societal pressure from family, friends, and the larger community. However, prestigious Indian engineering institutions like the Indian Institutes of Technology (IITs), National Institutes of Technology (NITs), and Indian Institutes of Information Technology (IIITs) have a rigorous selection process, admitting only the most qualified students due to limited availability (Banerjee & Muley, 2006), resulting in intense competition and stress among applicants. The JNT University (India) reported that an average of 4,800 students dropped out of university engineering programs annually in 2009, and 5,200 in 2011, representing 3 to 4% of students. According to the All India Council for Technical Education (AICTE), the dropout rate for engineering programs in India is around 45% (AICTE, n.d.). University management cited the inability to handle the academic demands of the program as one of the primary reasons for the high dropout rates. Hence, this study was inspired by the movie *Three Idiots* to identify and verify the various factors contributing to the high dropout rates in engineering degree programmes to improve student retention.

Statement of Problem

The phenomenon of 'dropout' in universities refers to students who discontinue, fail or are unable to complete their enrolled studies or courses (Erben, 2005; Hernández, 2008). While previous research has explored the reasons behind the high dropout rates in universities (Bound

et al., 2010; Bowen et al., 2009), minimum research frameworks or predictive models were developed to forecast the likelihood of a student not completing their studies. To address this gap, the university requires a framework or system to predict the potential dropout rate of their engineering students by studying both internal and external factors such as student characteristics, faculty members' proficiency, peer pressure, and family expectations. By understanding the student experiences and developing effective interventions and support systems, the university management may counteract this phenomenon and increase the retention rate of engineering students.

Preliminary Research Question

This study aimed to address the issue of student dropout in an engineering degree program. Prior research has mainly focused on identifying the relationship between specific reasons (variables) and dropout rates. To build on this, the current study seeks to develop a predictive model by integrating multiple independent variables (reasons or factors) to forecast university dropouts. The research questions guiding this study are:

- What are the most significant internal and external factors that influence student dropout rates in an engineering degree programme, and how can these factors be integrated into a predictive model for dropout risk assessment?
- What combination of student characteristics, academic performance, social and cultural factors, and institutional policies and practices are the most accurate predictors of dropout risk in an engineering degree program, and how can this knowledge be leveraged to support student retention efforts?

Review of Literature

The literature review presents a summary of current research utilizing independent variables defined in this study to predict the likelihood of student dropout. Six studies examining contributing factors to university student dropout are discussed. Through careful analysis of the literature, common factors are identified and categorized to better understand the reasons behind students failing to complete their studies.

The Study by Sanders, Daly and Fitzgerald (2016)

The survey instrument utilized by Doyle, Hind, and Lopes (2013) identified multiple factors that contribute to the risk of failure for university students. One key factor is increasing diversity among the student population, which may create barriers to academic success for some students. Crosling, Thomas, and Heagney (2008) noted that students from disadvantaged backgrounds may encounter difficulties in adjusting to academic demands and university culture. Another critical factor identified by the authors is the early identification of students who may withdraw, which could be accomplished through early warning systems and proactive outreach to at-risk students (Tinto, 2012). Additionally, Baumeister and Vohs (2004) revealed that the development of a university-level academic skill set is a crucial factor that impacts students' achievement in higher education. This transition can be challenging for students who are not adequately prepared for the academic rigour of university courses. Additionally, changes in personal circumstances, such as family or financial issues, can negatively impact students' academic progress (Crosling et al., 2008). Finally, various key factors were identified that universities must address to improve students' retention and success rates, including social integration, support from peers and family, absenteeism, significant financial debt, self-esteem, and career prospects. For example, students who feel disconnected from the university

community may be more likely to drop out (Hurtado & Carter, 1997), and those who lack financial resources may struggle to meet basic needs and afford educational expenses (Goldrick-Rab, Broton, & Eisenberg, 2016).

The Study by Venuleo, Mossi and Salvatore (2016)

Guidi and Salvatore (2013) argued that a student's educational subculture plays a more critical role in determining university dropout rates than their prior academic knowledge and skills. While factors such as cognitive ability, personality traits, parenting style, and classmates' achievements may have some effect on predicting university success, they have minimal association compared to personal and social culture. The authors have identified several factors that can directly influence a student's educational success. These factors include the combination of a student's family, classmates, and university, which can affect their study commitment and learning engagement (Valadez, 2008). Additionally, the authors have identified the importance of the meanings that students use to interpret their role and context (Cole, 1996), the social environment and world they inhabit (Valsiner, 2000), and negotiated and shared meanings within subcultures (Guidi and Salvatore, 2013) in shaping educational outcomes. It could be concluded that personal and social culture have a more substantial influence on educational success than cognitive ability, personality traits, parenting style, or classmates' achievements (Valsiner, 2007).

The Study by Rodríguez-Gómez, Feixas, Gairín and Muñoz (2015)

Research has shown that student dropout is a major issue that educational institutions and policymakers must address to ensure that students have the support they need to succeed (Bean & Metzner, 1985; Tinto, 2006). The authors of a recent study have identified several factors that contribute to this problem (Smith & Shultz, 2020). For instance, enrolling in the wrong course due to a lack of proper guidance or information can lead to a student's disengagement,

dissatisfaction, and eventual dropout (Pascarella & Terenzini, 2005). Additionally, academic factors, such as a student's prior training and performance, can have a significant impact on their success in higher education (Schneider & Preckel, 2017). Failing to meet the requirements of the job market can also lead to students dropping out, as they may feel that their education is not preparing them for future employment (Lester & Keleher, 2016). Furthermore, the quality of teaching and the design and implementation of curricula play a vital role in student retention rates (Lizzio, Wilson, & Simons, 2002). If the teaching quality is poor or the curricula do not align with the needs and interests of the students, this can lead to a lack of engagement and interest in the course, resulting in student dropout. Financial factors, such as the cost of education and access to financial aid, can also influence student retention rates (Goldrick-Rab, 2016). Finally, the stature, trustworthiness, and financial stability of universities are also significant factors. If a university has a poor reputation, is not considered trustworthy, or is facing financial instability, this can lead to a lack of confidence among students and their families, which may contribute to student dropout rates (DesJardins, Ahlburg, & McCall, 2006). Overall, the authors' research has provided valuable insights into the various factors contributing to student dropout, highlighting the need for targeted and effective interventions to address this pressing issue.

The Study by Stinebrickner and Stinebrickner (2014)

The authors' research has provided valuable insights into the various reasons why students may leave the university before completing their studies. These reasons can be grouped into several categories, including demographic factors, academic performance, financial considerations, and personal reasons. In terms of demographics, the authors' research found that gender and race can have a significant impact on student dropout rates. Female students generally performed better than male students, which may contribute to lower dropout rates

among female students. Meanwhile, the dropout rate for black students was found to be the highest among all races, highlighting the need for targeted support and interventions to improve retention rates among this population. Understanding these demographic factors can help universities develop strategies to support students and improve retention rates.

Poor academic performance is a significant contributor to student dropout rates. A lack of academic success can lead to feelings of inadequacy, a lack of confidence, and a sense that staying in university is not worthwhile. Financial considerations also play a crucial role, with students from low-income families more likely to drop out of university due to financial strain (Goldrick-Rab, Broton, & Eisenberg, 2016). Additionally, a lack of parental support, especially for students who are the first in their families to attend university, can also contribute to a student's decision to leave university (Astin, 1993). Finally, personal reasons such as homesickness, mental health challenges, and dissatisfaction with the university experience can also lead to student dropout (Braxton, Hirschy, & McClendon, 2004). Overall, the authors' research has highlighted the complex and multifaceted nature of student dropout, emphasizing the need for targeted interventions that address the specific factors contributing to this issue. By understanding the reasons why students leave university, educational institutions and policymakers can develop strategies to support students and improve retention rates.

The Study by Chen (2011)

According to Chen (2011), the high university dropout rate cannot be attributed solely to the characteristics and behaviours of individual students, but also to institutional characteristics that can influence student behaviour. In his research, Chen cites several studies that identify various factors that contribute to student dropout rates. For example, Rhee (2008) emphasizes the importance of student demographics, while Kim (2007) focuses on the structural characteristics

of universities. Tinto and Pusser (2006) investigate the relationship between the characteristics of university teaching professionals and student dropout rates. Chen (2011) identifies two broad categories of factors that can influence student dropout rates: student characteristics and institutional characteristics. Student characteristics include factors such as demographics, socioeconomic background, student aspirations, academic achievement, financial assistance, and ability to integrate into campus life. Institutional characteristics include university structure, teaching resources, and financial resources.

By considering both student and institutional characteristics, educational institutions and policymakers can develop targeted interventions to improve student retention rates. By addressing the specific factors that contribute to student dropout, universities can improve the overall success and satisfaction of their students, ultimately contributing to a more successful and productive society. Overall, Chen's research highlights the need to move beyond a narrow focus on individual student characteristics and behaviours and to consider the broader institutional factors that contribute to student dropout rates. By adopting a more holistic approach, universities can better support their students and help them achieve their full potential.

The Study by Edwards, Cangemi and Kowalski (2001)

The authors found that students' commitment to an institution and their perceived value of education to personal development were significant factors in their decision to continue their education at a university. These findings were supported by Boyer (1987), who emphasized that students' intensity of commitment to an institution could reduce their likelihood of dropping out. The authors also examined academic factors such as insufficient study habits, unclear goals, and unsatisfied educational needs that can contribute to dropping out. In addition, they identified common personality traits among students who dropped out, including a lack of self-confidence,

self-sufficiency, and rebelliousness against authority (Churchill & Iwai, 1981). Financial, emotional, and environmental factors were also found to play a role in university dropout. For instance, family background, student expectations, and interactions with faculty were identified as environmental factors that can affect a student's decision to drop out (Tinto, 1975).

In conclusion, this research showed that multiple factors could contribute to university dropout. Therefore, addressing the university dropout rate requires a holistic approach that includes academic, environmental, emotional, and financial factors. Institutions can increase student retention by implementing policies that enhance student commitment, provide academic support, and create a supportive and inclusive campus environment. Additionally, students can benefit from setting clear goals, developing strong study habits, and seeking support from family, friends, and university resources.

Summary of Common Factors

Based on multiple research studies, there are some commonalities in the reasons for student dropout, although each author may have their distinct reasoning and justifications. Therefore, it is important to consolidate these perceptions into significant factors for further investigations and analyses. In this study, the author utilized their industrial experience and work exposure to regroup the factors, and identified eight common predictors, which are summarised in Table 1.

Table 1

Summary of Common Factors

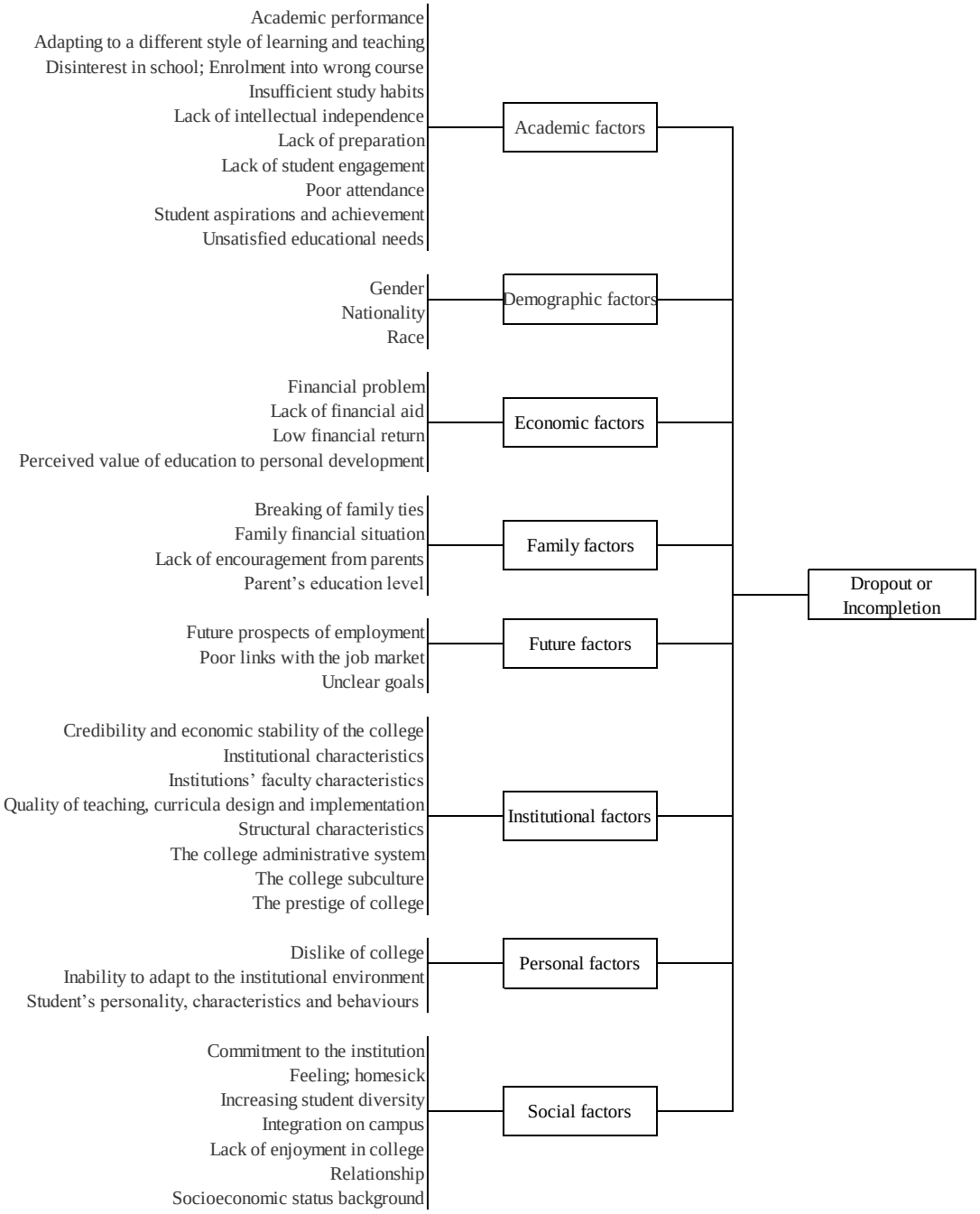
Independent Variable (Predictors)	Literature support
Academic factors • Academic performance; Adapting to a different style of learning and teaching; Disinterest in school; Enrollment into wrong course; Insufficient study habits; Lack of intellectual independence; Lack of preparation; Lack of student engagement; Poor attendance; Student aspirations and achievement; Unsatisfied educational needs	Sanders, Daly &Fitzgerald, 2016); Rodriguez-Gomez, et al., 2015; Edwards, Cangemi, & Kowalski, 2001.
Demographic factors • Gender; Nationality; Race	Stinebrickner & Stinebrickner, 2014; Rhee, 2008.
Economic factors • Financial problem; Lack of financial aid; Low financial return; Perceived value of education to personal development	Stinebrickner & Stinebrickner, 2014; Chen, 2011.
Family factors • Breaking of family ties; Family financial situation; Lack of encouragement from parents; Parent's education level	Sanders, Daly & Fitzgerald, 2016; Valsiner, 2007; Valadez, 2008; Stinebrickner, and Stinebrickner, 2014.
Future factors • Future prospects of employment; Poor links with the job market; Unclear goals	Sanders, Daly & Fitzgerald, 2016; Gomez, et al., 2015; Stinebrickner, and Stinebrickner, 2014; Edwards, Cangemi, & Kowalski, 2001.
Institutional factors • Credibility and economic stability of the college; Institutional characteristics; Institutions' faculty characteristics; Quality of teaching, curricula design and implementation; Structural characteristics; The college administrative system; The college subculture: The prestige of college	Sanders, Daly & Fitzgerald, 2016; Valadez, 2008; Guidi & Salvatore, 2013; Venufeo, Mossi & Salvatore, 2016; Gomez, et al., 2015; Chen, 2011; Kim, 2007; Gansemer-Topf & Schuh, 2006; Ryan, 2004; Titus, 2004; Tinto & Pusser, 2006; Schuster, 2003; Edwards, Cangemi, & Kowalski, 2001; Churchill & Iwai, 1981.
Personal factors • Dislike of college: Inability to adapt to the institutional environment; Student's personality, characteristics and behaviours	Sanders, Daly, & Fitzgerald, 2016; Valsiner, 2007; Cole, 1996; Venuleo, Mossi & Salvatore, 2016; Edwards, Cangemi, & Kowalski, 2001; Churchill & Iwai, 1981.
Social factors • Commitment to the institution; Feeling homesick; Increasing student diversity; Integration on campus; Lack of enjoyment in college; Relationship; Socioeconomic status background	Sanders, Daly, & Fitzgerald, 2016; Valsiner, 2007; Valadez, 2008; Cole, 1996; Valsiner, 2000; Venuleo, Mossi & Salvatore, 2016.

Johnson and Henderson (2012) stated that a theoretical framework is a structural tool used to link up theoretical assumptions and research application concepts to provide a general overview plan and outline the research's specific objectives. It serves as a guideline for the

research process where the research can be executed systematically in an appropriate manner. Hence, the Theoretical Framework of this study can be represented in Figure 1:

Figure 1

The Theoretical Framework



Research Questions

Based on the derived theoretical framework, the following research questions will be investigated in this study:

- What is the impact of academic, demographic, economic, family, future, institutional, personal, and social factors on the dropout rate in an engineering degree programme?
- Can these factors be integrated to develop a predictive model for the engineering degree programme's dropout rate?

Research Hypotheses

Based on the theoretical framework and research questions, the following hypotheses will be tested in this study:

- H_1: Academic factors will have a significant impact on the university engineering degree student dropout rate.
- H_2: Demographic factors will have a significant impact on the university engineering degree student dropout rate.
- H_3: Economic factors will have a significant impact on the university engineering degree student dropout rate.
- H_4: Family factors will have a significant impact on the university engineering degree student dropout rate.
- H_5: Future factors will have a significant impact on the university engineering degree student dropout rate.
- H_6: Institutional factors will have a significant impact on the university engineering degree student dropout rate.

- H_7: Personal factors will have a significant impact on the university engineering degree student dropout rate.
- H_8: Social factors will have a significant impact on the university engineering degree student dropout rate

Research Methodology

According to Bougie and Sekaran (2019), it is crucial to employ a systematic and organized research method and design to obtain relevant facts for critical analysis to address the research objectives. Debra and Rog (1997) and Mingers (2001) describe research design as a structured set of guidelines or a master plan that connects data collection and analysis activities, facilitating valid and reliable research results that can be used to address research questions. Therefore, this study utilized the research methodology proposed by Saunders et al. (2009), which employed a research process 'onion' consisting of five layers: philosophy, approaches, strategy, time horizons, and data collection methods.

Research Philosophy

To develop a suitable methodological framework, it is necessary to first identify the research philosophy, such as whether to adopt a positivist, interpretivist, or realist view (Bryman and Bell, 2007). Since university student dropout can be described, defined, verified, and predicted using quantitative data and statistical analysis, the philosophical framework of this study was based on positivism (Wisker, 2008). This means that the defined research hypotheses in this study were tested and validated using existing theories to develop a theory that addressed the research questions (Saunders et al., 2009). In other words, the study aimed to objectively examine the impact of various factors on university dropout rates at the university, utilizing

quantifiable properties, independent participants, and appropriate research instruments (Kasi, 2006).

Research Approach

When conducting research, either a deductive or inductive approach to reasoning could be adopted (Hussey & Hussey, 1997). The deductive approach is narrower in scope and commonly used to validate research hypotheses, while the inductive approach is more open-ended and exploratory (Robert & Richard, 2007; Wilson, 2010). In this study, the deductive approach was employed since various factors contributing to university student dropout will first be collected and evaluated, then refined into testable hypotheses to confirm or reject the initial assumptions.

Research Strategy

There were various research strategies available for researchers to choose from, such as qualitative strategies like grounded theory, ethnography, action research, and case study, or quantitative strategies like experiments and surveys, to address the research questions (Collins, 2010; Saunders et al., 2009). In this study, a survey research strategy was utilized because it allowed for the setting of research questions, the definition of theoretical hypotheses, the collection of quantitative data from a known population, and the analysis of data using both descriptive and inferential statistics. The study aimed to determine whether changes in the independent variables, or contributing factors, would affect the dependent variable, or student dropout rate. Ultimately, this was a correlational study intended to establish the relationships between the various factors and the student dropout phenomenon in the university and to develop a predictive model.

Time Horizon

It was necessary to consider the time horizon issue when planning this study. The choice must be made between using a longitudinal study which examines a phenomenon over a period of time, or a cross-sectional study which focuses on a specific moment in time. Additionally, in a cross-sectional study, data is collected at only one point in time, while a longitudinal study collects data at multiple points over a defined period (Sekaran & Bougie, 2010; Wilson, 2010). Due to constraints and limitations in resources and time, a cross-sectional study was used in this study since it measured the necessary variables in less time compared to a longitudinal study.

Data Collection Method

According to Somekh and Lewin (2005), survey questionnaires are useful for collecting data and conducting statistical analysis to verify research hypotheses. To ensure that the sample population adequately represented the entire university population, stratified random sampling was recommended based on the 16 departments/disciplines in the university, and the sampling frame obtained from the university admission department. The university's total population was about 8,000 students, so proportionate stratification was performed based on the respective department sub-populations. Using Krejcie and Morgan's (1970) random sampling chart and the National Statistical Service's (2017) online sampling size calculation, the sample size for this study was determined to be 367 students, with a 95% confidence level and a 5% confidence interval. However, since this was a fictional institution in a movie, the participants in this study were based on individuals who understood and/or experienced the education system in India. Consequently, a total of 101 respondents participated in this study through an e-survey.

According to various authors (Anderson & Morgan, 2008; Brace, 2008; Muijs, 2004; Pershing, 2006), the questionnaire should be simple and concise to ensure participant interest and

obtain accurate and unbiased data. Based on the identified contributing factors and university dropout from the literature review, constructs were included in the questionnaire and distributed over three months using a five-point Likert scale. Before the actual survey period, a pilot test was conducted to ensure construct validity. Participation was voluntary and anonymous, and randomly selected and respondents were assured that they would not be penalized for non-participation.

Data Analysis

This study aimed to prove research hypotheses on the contributing factors affecting university dropout rates using Confirmatory Factor Analysis (CFA) with Partial Least Square Regression (PLS) Path Model. The SmartPLS 4.0 programme was used as the analysis tool. The approach involved developing and analyzing a structural equation model (SEM) in two stages, as suggested by Chin and Marcoulides (1998). In the first stage, CFA will be conducted to measure the proposed model's multi-item constructs, including Construct Validity (consisting of Convergent Validity and Discriminant Validity) and Reliability. In the second stage, the proposed structural model will be analyzed for hypotheses testing. Additionally, Statistical Package for the Social Sciences (SPSS) Pearson Correlation and Multi-Linear Regression analysis were used to cross-examine and answer the proposed hypotheses. The respective coefficient of determination of the contributing factors was calculated to provide meaningful insights into their relationships with the university dropout rate.

Findings and Discussions

Confirmatory Factor Analysis

In this study, Confirmatory Factor Analysis (CFA) was performed to analyse the measurement model. According to Jeong (2012), the results will be derived from the analysis

using PLS Measurement Model based on the evaluation of Convergent Validity, Discriminant Validity, and Internal Consistency on the measuring items, and their suitability. Sekaran (2003) stated that to test the goodness of fit measures, the data collected should be tested and achieve both validity and reliability. Dane (2010), Fink (2009), and Kothari (2009) defined validity as the degree to which a test or study accurately reflects or assesses the specific theoretical concept that the researcher attempts to measure. Failure to achieve validity can result in inaccurate conclusions and interpretations. Shuttleworth (2009) explained that reliability is an indication of the stability and consistency with which the instrument measures the concept and hence confirms consistent measurement across time and various items in the instrument.

Construct Validity

It was verified by Jackson (2009), Lodico et al. (2010) and McBurney (2009) that the purpose of the construct validity is to measure the extent to which the items in a scale all measure nothing else but the same construct. Additionally, it was stated that it examines whether the instrument accurately measures a theoretical construct that it is designed to measure with reference to the theories or concepts behind the research.

Convergent Validity

Hair et al. (2010) show that convergent validity is the degree to which multiple items measuring the same concept agree. To verify this, factor loadings, composite reliability, and average variance extracted can be used to assess the convergence validity. Additionally, to achieve a level of validity, the loading for all items should exceed the recommended value of .500. However, the four outer loadings were below the requirements which could affect the convergent validity of the model; hence, one of the solutions was to remove them and re-tabulate the model. Consequently, Economic factor ECO04: ‘Perceived value of education to personal

development' (-.112), Family factor FAM01: 'Breaking of family ties' (.250), Institutional factor INST07: 'The college subculture' (.180), and INST08: 'The prestige of college' (.140) were removed and after re-running the matrix, all the loadings were below .500.

Composite reliability (CR) value depicts the degree to which the construct indicators indicate the latent. From Table 1, CR ranged from .780 to .985, which exceeded the recommended value of .700 as stated by Hair et al. (2010). Likewise, to justify the use of a construct, the average variance extracted (AVE) which measures the variance captured by the indicators relative to measurement error, should be greater than .500 (Barclay et al., 1995). Table 2 showed that the AVE of this construct ranged between 0.505 and .740. The results revealed that all 8 constructs: Academic (AC), Demographic (DEM), Economic (ECO), Family (FAM), Future (FUT), Institutional (INST), Personal (PER), and Social (SOC) are all valid measures of their respective constructs based on their parameter estimates and statistical significance.

Table 2

Result of the Measurement Model

Model Construct:	Items measured	Loading	T-value (p<.001)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Academic (AC)	10	.511 to .745	4.616 to 11.789	.870	.505
Demographic (DEM)	3	.818 to .864	16.460 to 23.462	.874	.698
Economic (ECO)	3	.822 to .855	17.800 to 23.188	.876	.703
Family (FAM)	3	.615 to .878	3.448 to 23.359	.780	.547
Future (FUT)	3	.762 to .909	6.879 to 47.384	.895	.740
Institutional (INST)	6	.647 to .904	5.135 to 17.735	.880	.555
Personal (PER)	3	.728 to .829	3.751 to 6.168	.830	.619
Social (SOC)	7	.586 to .785	5.603 to 11.988	.879	.511

Source: developed for this study

Discriminant Validity

According to Compeau et al. (1999), discriminant validity refers to the extent to which the items in a measure are able to differentiate among different constructs or concepts being

measured. It can be evaluated by analyzing the correlations between the measures of constructs that have the potential to overlap. In order to establish discriminant validity, it is expected that the items will have a stronger association with their own constructs in the model and that the variance shared between the construct and other constructs is, on average, lower. Adequate discriminant validity was attained in this study.

It was stated that the Heterotrait ratio measures the discriminant validity of a set of measures or a scale by comparing the correlation between different constructs to that between measures of the same construct. It is commonly used with other measures, such as the Fornell-Larcker criterion and average variance, to assess a scale's ability to differentiate among constructs. It was noted that a ratio below .400 indicates adequate discriminant validity, but it should not be the sole measure relied upon and should be interpreted in conjunction with other measures (Henseler et al., 2015). Accordingly, various constructs used in this study attained a ratio greater than .400 which implied inadequate discriminant validity (see Table 3).

Table 3

Discriminant Validity using Heterotrait Ratio

Model Construct	AC	DEM	ECO	FAM	FUT	INST	PER	SOC
Academic (AC)	.784*							
Demographic (DEM)	.904*	.720*						
Economic (ECO)	.351	.303	.216					
Family (FAM)	.228	.237	.139	.706*				
Future (FUT)	.235	.226	.187	.809*	.815*			
Institutional (INST)	.192	.098	.150	.206	.119	.157		
Personal (PER)	.756*	.693*	.642*	.652*	.578*	.564*	.390	
Social (SOC)	.232	.149	.168	.189	.143	.177	.731*	.537*

*>.400: inadequate discriminant validity

Additionally, according to PLS-SEM analysis, the Fornell-Larcker criterion (Fornell & Larcker, 1981). could also be utilized to establish discriminant validity. To determine discriminant validity, the AVE must first be calculated for each construct and compared with its

correlations with other constructs. If the square root of the AVE is found to be greater than the construct's correlations with other constructs, then discriminant validity is established. The Fornell-Larcker criterion simplifies this assessment process by presenting a summary table to evaluate whether each construct meets the criterion (see Table 3). According to some researchers, a common rule of thumb is to consider the square root of the AVE to be acceptable if it is greater than .500 or .700 (Kline, 2015). Table 4 showed numerous constructs failed to attain the suggested value which implied inadequate discriminant validity among constructs in this model. In particular, both PER and FAM constructs were removed to promote the validity and reliability of the findings.

Table 4

Discriminant Validity Using the Fornell-Larcker Criterion

Model Construct	AC	DEM	ECO	FAM	FUT	INST	PER	SOC
Academic (AC)	0.636							
Demographic (DEM)	0.642	0.836						
Economic (ECO)	0.733	0.580	0.838					
Family (FAM)	0.157*	0.166*	0.052*	0.740				
Future (FUT)	0.116*	0.222*	0.047*	0.491*	0.860			
Institutional (INST)	0.060*	0.161*	-0.072*	0.581	0.710	0.745		
Personal (PER)	0.039*	0.030*	0.091*	0.029*	0.011*	-0.095*	0.787	
Social (SOC)	0.700	0.622	0.572	0.528	0.549	0.533	0.325*	1.000

*<.500: inadequate discriminant validity

Reliability Analysis

Cronbach's Alpha Coefficient was used to assess the inter-item consistency or reliability of the variables used in this study. Table 5 summarised the loading and alpha values. Most alpha values were above .700, and composite reliability values ranged from .511 to .904. However, FAM and PER attained a value of .692 and .692 respectively which implied a moderate degree of internal consistency. They were somewhat related to one another, but there was still room for improvement. To enhance reliability, both FAM and PER were removed from this model. In

sum, internal consistency reliability was considered acceptable and the measurements were reliable.

Table 5

Results of Reliability Testing

Model Construct	Loading Range	Cronbach's Alpha	Number of items
Academic (AC)	.511 to .745	.835	10
Demographic (DEM)	.818 to .864	.786	3
Economic (ECO)	.822 to .855	.789	3
Family (FAM)	.615 to .878	.692*	3
Future (FUT)	.762 to .909	.828	3
Institutional (INST)	.647 to .904	.837	6
Personal (PER)	.728 to .829	.691*	3
Social (SOC)	.586 to .785	.838	7

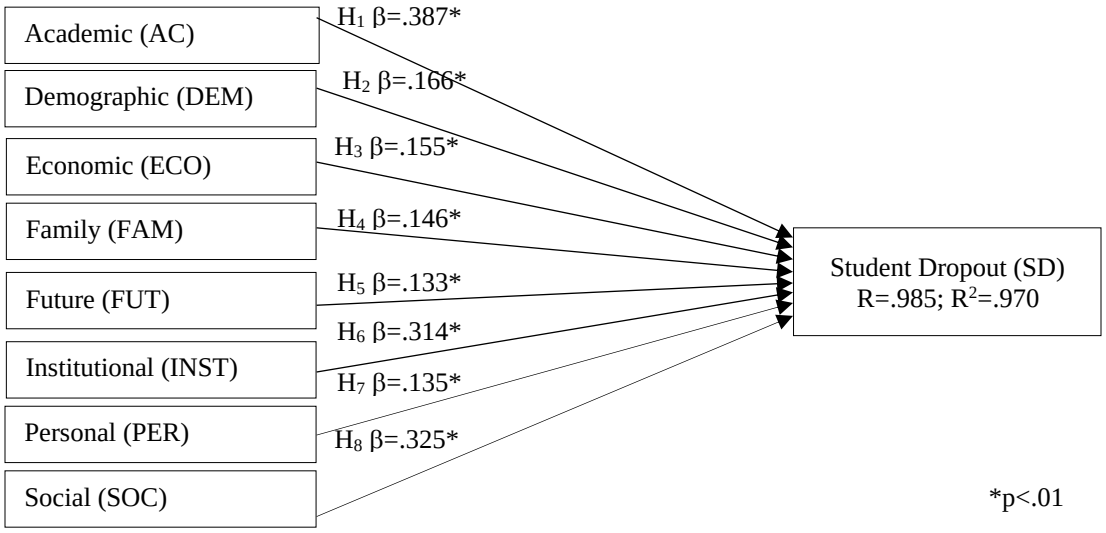
*<.700: moderate degree of internal consistency

Hypothesis Testing

SmartPLS used a procedure called Bootstrapping to generate T-statistics for significance testing of both the inner and outer models. The Bootstrap result approximates the normality of data. In this study, 5,000 subsamples were taken from the original sample with replacement to give Bootstrap standard errors, which in turn gives the approximate t-values for significance testing of the proposed structural path using the path weighting, or p coefficients and corresponding p values generated (Chin et al., 1998). Shin and Lee (2014) state that the structural model can be used to evaluate the variance explanation power (R^2) of structural concept, and the significance of path coefficient (β) expressing causal relationship information between two variables through structural equation analysis. The final SEM for this study is presented in Figure 2.

Figure 2

Measurement Model of the Study



According to Feyitimi, Nasieku, and Muturi (2016), the goal of PLS (Chin et al., 1998) is to obtain high R^2 values and significant t-values that can reject the null hypothesis. The study explains that absolute t-values greater than 1.65 indicate a significance level of .01, while values above 1.96 and 2.58 suggest significance levels of .05 and .01, respectively. Additionally, t-values above 3.26 indicate a significance level of .001 ($p < .001$). Relevant path coefficient values, β values, and significant p coefficients are presented in Table 6. The objective of the study was to examine the relationship between independent variables AC, DEN, ECO, FAM, FUT, INST, PER, SOC, and dependent variable SD. The study concluded that all null hypotheses were rejected, demonstrating that independent variables had a significant impact on SD. These findings are significant and warrant further investigation to better understand the relationships and influences involved.

Table 6

Summarized Results of the Hypotheses Verified

Hypothesis		Path Coefficient (β)	Sample Mean(M)	Standard Deviation (STDEV)	T Statistics	Decision
H_1	AC→SD	.387*	.383	.044	8.745	Adopted
H_2	DEM→SD	.166*	.164	.024	6.832	Adopted
H_3	ECO→SD	.155*	.152	.030	5.191	Adopted
H_4	FAM→SD	.146*	.141	.026	5.677	Adopted
H_5	FUT→SD	.133*	.134	.030	4.440	Adopted
H_6	INST→SD	.314*	.300	.037	8.469	Adopted
H_7	PER→SD	.135*	.125	.030	4.544	Adopted
H_8	SOC→SD	.325*	.322	.052	6.278	Adopted

Correlational Analysis

Figure 1 demonstrated a remarkably strong and positive correlation (r=.985, p<.001) between the dependent variable, Student Dropout (SD), and the independent variables: Academic (AC) .692, Demographic (DEM) .597, Economic (ECO) .532, Family (FAM) .424, Future (FUT) .524, Institutional (INST) .590, Personal (PER) .321, and Social (SOC) .490. The coefficient of determination (R2=.970) indicated that 97% of the overall change in student satisfaction can be explained by various student service activities, while the remaining 13% can be attributed to unidentified variables. It is noteworthy that FAM and PER exhibited the weakest correlation coefficients, whereas AC, DEM, and INST had the highest values, indicating their significant influence on the outcome of student dropout. Thus, the strongest correlation coefficients imply that the independent variables with the highest correlation coefficients (AC, DEM, and INST) have a more substantial influence on the outcome of student dropout than those with weaker correlation coefficients (FAM and PER). This finding could help prioritize resources and efforts towards improving the areas that have the most significant impact on student dropout (SD).

Multiple Linear Regression Analysis

This study utilized Multiple Linear Regression Analysis to explore the association between SD and AC, DEM, ECO, FUT, INST, and SOC, as illustrated in Table 7. Since FAM and PER did not meet the validity and reliability criteria, they were not included in the analysis. Following Kutner et al. (2004), this method allowed for the identification of the linear relationship between the dependent and independent variables, while also controlling for the effects of other independent variables. As noted by Field (2013), the main objectives of this analysis were to assess the unique contribution of each independent variable to the dependent variable, predict the value of the dependent variable based on the values of the independent variables, identify the most significant independent variable, and manage the effects of other independent variables.

Table 7

Multiple Linear Regression Analysis

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.215	.069		3.117	.002
	AC	.224	.015	.409	14.802	.000
	DEM	.067	.010	.159	6.790	.000
	ECO	.118	.016	.196	7.469	.000
	FUT	.091	.011	.204	8.438	.000
	INST	.235	.016	.372	15.059	.000
	SOC	.205	.012	.327	17.103	.000

[a.] Dependent Variable: SD

The F-test (6, 101) = 479.529, $p < .001$, demonstrated that the model was statistically significant. The model accounted for a large proportion of the variance in student dropout (SD) (96.6%). The results revealed that the independent variables, Academic factor (AC) ($\beta = .224$, $p < .001$), Institutional factor (INST) ($\beta = .235$, $p < .001$), and Social factor (SOC) ($\beta = .205$, $p <$

.001), had a significant positive impact on student dropout. However, the Demographic factor (DEM) ($\beta = .067$, $p < .001$) and Future factor (FUT) ($\beta = .091$, $p < .001$) had a less significant impact. Based on these findings, it is recommended that universities prioritize efforts to enhance academic, institutional, and social factors to reduce student dropout rates. Additionally, the predictive model developed from this study (Student Dropout (SD) = .215 + .224AC + .118ECO + .235INST + .205SOC) could be used to predict student dropout and develop strategies to improve student retention in these areas.

These findings suggest that interventions aimed at improving academic performance, student engagement, and addressing unsatisfied educational needs may be the most effective at reducing dropout rates. Other strategies may include providing targeted resources for students who struggle with adapting to a different style of learning and teaching or implementing attendance policies to encourage regular attendance.

Additionally, it was identified that several institutional factors had the potential to reduce student dropout, including the credibility and economic stability of the university, institutional and faculty characteristics, quality of teaching, curricula design and implementation, structural characteristics, the university administrative system, the university subculture, and the prestige of the university. To reduce student dropout, it was recommended that universities consider implementing strategies such as improving the quality of teaching and curricula design, addressing any structural or administrative issues that may hinder student success, and fostering a positive university subculture that promotes engagement and student well-being. Furthermore, universities could work to improve their reputation and prestige through various initiatives and partnerships, as this may increase student motivation and commitment to completing their

studies. Overall, the analysis suggested that addressing multiple academic factors could help reduce student dropout and improve student success in universities.

Lastly, to reduce student dropout rate, institutions can take measures such as providing academic support programs to improve academic performance, offering orientation programs to help students adapt to a different style of learning and teaching, and providing career counseling to ensure students are enrolled in the right course, creating a positive and engaging campus culture to foster student engagement and addressing social factors by promoting diversity, providing support for homesickness, and creating an inclusive environment for students of different socioeconomic backgrounds. It is also important for institutions to maintain a high level of credibility and economic stability, ensure high-quality teaching, design and implement effective curricula, have a well-structured administrative system, and foster a positive university subculture to increase institutional commitment and prestige.

Conclusion

The results of this study provide valuable insights into the factors that contribute to the high dropout rate among university students. The use of Confirmatory Factor Analysis (CFA) with the SmartPLS Measurement Model helped to ensure the validity and reliability of the measurement model, which consisted of eight contributing factors. Through Convergent Validity, Discriminant Validity, and Reliability Analysis, the model was rigorously tested, and the Pearson correlation and Coefficient of Determination were found to be significant. The findings of the study confirmed that the contributing factors have a direct and positive impact on the university dropout rate, and the null hypotheses were rejected accordingly. However, it was necessary to remove two factors (FAM and PER) from the model due to validity and reliability issues. Conversely, three factors (AC, INST, SOC) showed a stronger relationship with the

dropout rate, highlighting the importance of addressing these factors to maximize student retention. The results of this study can be used by university management to develop targeted interventions and countermeasures aimed at improving student retention rates. Furthermore, these findings provide a basis for future research into the factors influencing student retention in higher education, potentially leading to the development of more effective retention strategies and interventions.

Implications

This study's findings have significant and far-reaching implications. One such implication is that universities can use the insights gained to develop targeted interventions and strategies to improve student retention rates. Understanding the contributing factors that lead to student dropout enables universities to take steps to address these factors and support students more effectively, ultimately increasing their chances of completing their degree programmes.

Moreover, the study's identification of links between contributing factors and student dropout rates can help universities predict the likelihood of student dropout. This predictive model can be a valuable tool in universities' efforts to support students and improve retention rates. Additionally, the identification of links between various factors and reasons for university incompletion can offer useful guidance to other engineering universities facing similar challenges.

The conceptual framework established by this study can serve as a foundation for individuals interested in university policy and research. It can guide future research on the factors influencing student retention in higher education, potentially leading to the development of more effective retention strategies and interventions.

Overall, the study's findings have significant implications for university management, engineering universities, and individuals interested in university policy and research. The predictive model and conceptual framework developed in this study can be utilized to improve student retention rates and guide future research in this important area.

Limitations

Various limitations need to be considered when interpreting the results of this study. First, the study employed a cross-sectional design that may not fully capture the complexities and changes in the contributing factors over time. While a longitudinal study may provide a more in-depth understanding of the dynamics of student retention and dropout, it can be more time-consuming and expensive.

Second, this study relied solely on self-administered surveys, which may have limitations in terms of the participants' comprehension and response accuracy. Future research may benefit from incorporating qualitative interviews or focus groups to complement the quantitative data collected in this study.

It is also important to note that this study focused solely on engineering universities in India, limiting the generalizability of the findings to other types of universities or educational contexts. Therefore, caution should be exercised when applying the study's conclusions to different settings.

Despite these limitations, this study provides valuable insights into the critical factors that contribute to student dropout rate in engineering universities. The findings can inform the development of practical interventions and strategies to improve student retention rates. Future research can build on these findings by utilizing more comprehensive research methods and expanding the scope of the study to include other types of universities and educational contexts.

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Professional Learning Opportunity: The Impacts of a Teacher Professional Book Club on Learning Cultural Responsiveness

Laura Szech

Abstract

The purpose of this study was to consider if the method of a professional book club was an effective learning tool for teachers who wanted to be more culturally responsive in the classroom. This study occurred at a public elementary school with 11 racially diverse teachers who all identified as women. This study employed a basic qualitative design with data sources such as transcripts and participant journals. Results show that conditions for learning (Cambourne, 1995) were present and evidence of learning to be more culturally responsive was present. The participants benefited from reading, discussing, and applying their thinking and knowledge in the group setting. This study demonstrates that professional book clubs can be a useful format for teacher development.

***Keywords*:** culturally responsive pedagogy, book clubs, teacher professional development, conditions for learning, culturally responsive teaching

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In the aftermath of the murder of George Floyd in the Spring of 2020, systemic racism was no longer ignored or hushed in many mainstream discussions. *White Fragility* (DiAngelo, 2018) flew off the shelves and spokespersons, such as Dr. Ibram X. Kendi, author of *How to Be an Anti-racist* (2019), were invited to major news outlet programs to share knowledge and perspectives. White friends and acquaintances asked me, a White woman critical educator, what to read so that they could be better educated. Two White teacher friends started book clubs at their respective schools and asked for advice on what to read and how to lead them. To many, it felt like movement was really happening.

However, in the months afterward, I saw social media discussions that criticized reading books and joining book clubs as a method of change. It seemed like yet another thing that might be added to the list of performative White actions. But, as a White researcher who has always used book clubs with teachers instead of traditional professional development trainings, I was curious. Did book clubs help White people who were trying to come to terms with their lack of knowledge? Did these book clubs lead to any action or change? Because I study teachers, I went back to my transcripts from recent book clubs that I was leading just prior to the murder of George Floyd. I have always been interested in the question, "How do teachers engage with more culturally sustaining practices?" and these recent events led me to the following question for the present study, "How do professional teacher book clubs promote learning about culturally responsive teaching?" In the Spring of 2020, I was facilitating a book club that was reading Lisa Delpit's *Other People's Children* (2006), a foundational text in this field, so I used this point in history as a catalyst to explore if the medium of a book club was effective for learning.

Literature Review

Professional Book Clubs

For this study, professional book clubs refer to the activity of a group of teachers reading the same book at the same pace and discussing it at their discretion. The book chosen is a professional development non-fiction book, not a fiction book they may read with their students (another common form of book clubs). Many teachers lead student book clubs as literacy activities; however, this practice engages with professional books with the purpose of professional learning.

Recent research on teacher professional non-fiction book clubs is sparse, however, previous studies primarily show the socio-emotional side of book clubs. For example, professional book clubs can be safe, enjoyable spaces for teachers to discuss current events and professional issues (Bauman, 1994; Flood & Lapp, 1994; Smith & Galbraith, 2011). More specifically, Gardiner and Cumming-Potvin (2015) found that professional book clubs allowed teachers to negotiate, struggle, and make new meanings; and pushed back on the idea that teachers should simply recreate top-down practices as commonly expected in professional development trainings. Smith (1996) identified positive outcomes of the clubs: they were social environments where teachers became more familiar with each other and there was a sense of equality and cooperation because each person's voice was heard and respected.

Studies where the books directly correlated to content (ex: when high school teachers read young adult literature in the book club, or when pre-service elementary teachers read children's literature) found that teachers in their book clubs made direct and impactful pedagogical changes in their classrooms (George, 2002; Pretorius & Knoetze, 2013; Scheffel et. al, 2018). Building from these studies, this study considers specifically if the conditions in

professional book clubs are present to lead to new learning, especially when the book is not about curricular content as the previous studies show.

Theory of Learning

To consider the learning the teachers in the book club might engage with, I used Cambourne's (1995) theory which he refers to as "the conditions for learning." His conditions for learning outline ways of being and doing as well as circumstances that impact understanding. His theory states that the following must be in place for learning to occur: immersion (learner is saturated by the real use of the new information), demonstration (learner observes the new learning), engagement (learner participates in the learning), expectations (learner is told they are capable), responsibility (learner determines their engagement), approximations (learner tries out new learning without anxiety to fully use the knowledge), employment (learner practices together and alone), and response (learner receives feedback from knowledgeable other). These conditions ground the theory that book club can be a space where new knowledge construction can flourish.

Previous research reflects applications of this theory of the conditions for learning as applied to adult instruction and professional development. Cadavid Múnera, Díaz Mosquera, and Quinchía Ortiz (2010) used the conditions for learning to measure teachers' learning of a foreign language while learning to teach that foreign language. Masuchika and Boldt (2012) used the theory to evaluate two pedagogical approaches to teaching library classes. By comparing the two approaches to his theory, they were able to determine which approach was best for student learning. Mirci and Hensley (2011) used the conditions for learning as a tool for educational leaders to reflect on their implementation of sustainable change in their organizations.

Culturally Relevant Teaching

The broader societal movement of anti-racism described in the introduction deeply connects to teachers, pedagogy, and the institutions of school. For this study, I consider the more pedagogical arm of anti-racism, namely culturally relevant teaching, to pinpoint the teachers' learning. Culturally relevant teaching and its foundational and future lineages (Banks, 1989; Gay, 2000; Ladson-Billings, 2009, 2014; Paris, 2012) asks teachers to see their students and students' communities and families in a different light than is commonly found in classrooms; one of strength and wholeness. Early in this field, Lisa Delpit (2006) challenged teachers to see that "children from other kinds of families [not upper and middle-class] operate within perfectly wonderful and viable cultures but not cultures that carry the codes or rules of power" (p. 25). From the beginning, teachers who were considered culturally competent would see children from a different perspective. As the field adapted and changed, the notion of *responding* to culture became one of *sustaining* and growing diverse communities and cultures within the school system. This required teachers to know more about cultures and to actively work to sustain practices in the classroom. As Paris (2012) stated, "culturally sustaining pedagogy seeks to perpetuate and foster- to sustain- linguistic, literate, and cultural pluralism as part of the democratic project of schooling" (p. 93). Culturally sustaining practices in the classroom are ones that highlight and sustain the diversity and wholeness of the students' lives, families, and communities. Although connected, Delpit's work predates the term culturally sustaining, thus working more in the realm of culturally relevant teaching. As a result, for this research, I chose to use the term relevant.

Methods

This qualitative study examined the discussions and potential learning that occurred among elementary teachers who voluntarily participated in a professional book study together. All teachers (50) at the school were invited through a recruitment email and 11 registered. The book study occurred over the course of a semester year in four different meetings that were just over an hour each. Data for this study comes from transcripts of the teachers' discussions and entries into an electronic journal type log.

Participants

The participants were 11 elementary teachers at the same school. One was an intervention coordinator, one was the English Language Learner (ELL) teacher, and the other nine were classroom teachers. All identified as women. Racially, one identified as African-American, one as Hispanic, one as Hispanic and White, one did not share how she identified but spoke of being from Jamaica, and the other seven were White (see Table 1).

Table 1

Participant Pseudonym and Racial Identification

Pseudonym	Racial Identification
Dorothy	African-American
Sofia	Hispanic
Charlotte	Hispanic and White
Chloe	Did not identify (mentioned being from Jamaica)
Donna	White
Jennifer	White
Kate	White
Rachel	White
Stephanie	White
Stacy	White
Megan	White
Laura (researcher)	White

At the time of the study, I, the researcher, was an assistant professor in Language and Literacy at a mid-sized southeastern university. I identify as a woman, White, and middle-class. Prior to my academic career, I was an elementary school teacher for nine years and an administrator for three. In this book club, I was the leader and facilitator. I was invited to start it by a former graduate student from my university who taught at the school. I consider myself an active participant in the book clubs I facilitate, but I specifically try not to lead or center my own positions or conversations.

Data Collection

The data presented here were collected over four months in four different sessions. The first three were at the elementary school where we squeezed all 12 of us around a small worktable in an interventionist's classroom. The last one, due to the pandemic of 2020, was held on Zoom. Each session was recorded on a university laptop into the cloud then transcribed by a graduate student on the research team (who was not present at the sessions). The teachers also responded to prompts and questions in an individual Google Doc that was shared only with me. Initially, the teachers asked me to come up with a few book choices to vote on. I presented them with titles and abstracts for the following foundational books: *Other People's Children* (Delpit, 2006), *The Skin That We Speak* (Delpit, 2008), *Unequal Childhoods* (Lareau, 2011), and *Ways with Words* (Heath, 1999). They voted and chose *Other People's Children* by Lisa Delpit (2006). The general format of the sessions was to go around the circle and share a point in the assigned section of reading that each person had highlighted or underlined. The group would then discuss that point. The conversations flowed freely and each person was able to contribute in this way, although certainly some voices were heard more than others.

Data Analysis

To answer my research question, "How do professional teacher book clubs promote learning about culturally responsive teaching?" I used qualitative coding methods (Glesne, 2016) to code the set of transcripts. I first coded all four sessions by Cambourne's (1995) conditions for learning to determine if this book club had the conditions present in its structure to be a true learning space. Then, I coded the transcripts a second time using these same conditions for learning to see if and when learning occurred about culturally relevant teaching through these conditions.

For example, for the condition of *responsibility*, or when the learners "themselves decide the nature of engagement" (Cambourne, 1995, p. 185), the first round of coding considered if the book club structure allowed for this condition to occur. This code looked at places where the teachers took responsibility for their own learning as in when someone stated, "one of the things to back on the book that I put a dot beside was…". Here, she decided the nature of that engagement. For the second round of coding, I looked at where the condition of *responsibility* led to learning about culturally relevant teaching. For example, on the second round of coding of the same condition of *responsibility,* Jennifer stated:

> I think that it's hard to do that, but I underlined that because I liked the way that she worded that, and it's hard to step out of your own and see it from, I mean you can't see it from somebody else's eyes, but even to attempt to see it from how they are.

Here, she decided her own nature of engagement with the text and reflected on how it helped her learn about cultural perspectives. I coded each transcript two times through from each lens of the conditions. By placing these two sets of codes with representative examples of each on a chart, I

was able to see where learning occurred (and when learning was less present) which led me to the results of the study as presented below.

Results

Result of this study come from using the conditions for learning outlined by Cambourne (1995) to consider the question, "How do professional teacher book clubs promote learning about culturally responsive teaching?" The results show that book clubs do provide ample space for new learning to occur.

Conditions for Learning Culturally Relevant Teaching

The format of a book club allows for learners to choose their levels of engagement, participate in the actual learning, try out ideas with lower anxiety levels, and receive feedback from knowledgeable peers and leaders. The specific book that the group is reading represents a form of demonstration but live engagement with a more knowledgeable other is not present without the work of the facilitator.

Immersion

In Cambourne's conditions for learning, *immersion* is the "state of being saturated by, enveloped in, flooded by, [and] steeped in" the learning itself (1995, p. 185). In a book club format such as this, the readers generally choose the topic and book that they would like to read which likely means the topic of the book will be one they deem important to their lives. For the condition of immersion to be present, teachers must feel saturated by the topic. For this book club, I, as the researcher, presented the topic of culturally relevant teaching and provided multiple book choices to all the faculty at their school. Only those who were interested signed up and voted on the book. This action indicated that they felt this topic was relevant to their

teaching lives since they chose to dedicate volunteer time to the topic. When asked why the teachers chose to join and read this book, Dorothy, an African-American teacher replied:

> [I] know that it's a push that the county, the world, and everybody is kind of going towards, and I just feel like the more people who understand what it is, the better we can serve students and we can just be, if that's a thing, just all of us can be.

Here the concept of being immersed in the need to be more culturally aware is described in Dorothy's daily life in and outside of school. Kate, a White teacher, remarked about understanding the importance of culture, "I think just really learning more about, not just the culture that our children are growing up in, but the culture all of our children are growing up in is going to be more and more and more important." Here, perhaps Kate had not previously thought about how it has *always* been important to learn about diverse cultures, but she is now immersed in it and sees the need. Thus, she joined the book club. The teachers described discussions of culturally relevant teaching from multiple angles in their professional lives; an indicator that they were saturated by the topic but clearly needed more help understanding it.

Demonstration

Demonstration is defined as "the raw data" of learning or seeing the expected outcomes in real life. Cambourne (1995) described this condition as the "ability to observe actions and artifacts" (p. 185). This is the condition that appeared least in the codes, likely because reading about something is not observing the real-life actions of a culturally relevant teacher. However, I found that the facilitator of the book club (myself) and knowledgeable teachers in the group often acted as the demonstrators along with direct quotes from the book at hand. For example, early on in discussions of the codes of power (Delpit, 2006), I stopped to explain the idea of "essentializing" as I felt the conversation was steering in that direction. I interjected:

> And I think we need to be careful not to essentialize the stories of the Black teachers or the White teachers in here to say that 'this is how Black teachers feel' or 'this is how White teachers feel.' I was thinking about this this morning because, you know, they're really obsessed with South Carolina right now on the news, and some pundit was talking and they're like "the Black vote," and I was like, "how is there *the* Black vote? Like *one*?"

Here, I was demonstrating how culturally relevant teachers think about communities as nuanced and whole, while applying that learning to current political conversations.

In a later conversation, the teachers were talking about correcting Dominant American English (DAE) in the classroom and one White teacher was pushing back. Here, I needed to step in to demonstrate the concept from Delpit's book.

> Donna: I looked at her and I said, "I love you, but the word is not 'idear.' You and my daddy need to get that out of your vocabulary."
>
> Laura: But here's what I would question: why is it not? Why is it not "idear?" Why are you right and she's wrong?
>
> Donna: Because that's the, yeah, because that's the way I was taught, right? But I'm saying, that's what I'm looking back at the time, I'm going, "oh my god, Donna." Now I can't even correct my daddy anymore, doggone it.

In this exchange, I, along with the text, demonstrated changing one's perception from normalized "correctness" about DAE to one of awareness of power. Culturally relevant teachers must work to promote the languages and dialects of the students' communities. In this exchange, Donna questioned the way she had always thought about community specific vocabularies and perhaps

opened up a space for more diverse practices in her classroom. In the book club setting, demonstration was provided by the more knowledgeable "others" in the group.

Engagement

The condition of *engagement* is "to engage with the demonstration that immersion provides" (Cambourne, 1995, p. 185) which is difficult without the actual observed demonstrations. However, Cambourne also described engagement as "active participation by the learner, which in turn involves some risk taking" (p. 185) which does appear in this book club format, especially as opposed to traditional top-down professional development sessions. When the teachers choose to attend and choose when to add to the discussions, they are actively participating in and choosing the learning at hand. Because the book club is not lead by any one person, no one is being called upon to speak, they speak when they choose. One example was when Dorothy, an African-American teacher, chose to speak up after I explained the idea of essentializing:

> I'm so happy you said that because I hear, just going off on that tangent, all the time on the news, they talk about "the white-collar vote," "the blue-collar vote," "the college-educated." The blah blah blah, then there's "the Black vote." That's one whole category by itself and you have all these other little categories. I'm just like, well, I'm not the same as any other, where are our categories? Why can't we be a part of a category?

Here she engaged with the concept of essentializing then made it personal and applied it to her own identity. She chose to speak up and engage with the demonstration I had given prior to that. Her comment was, in turn, likely a form of continued demonstration for the White teachers in the book club who had not thought of their colleague being essentialized in her voting practices.

Culturally relevant teachers must see communities and families from a position of uniqueness as opposed to essentializing them.

Another example of this condition was when a White teacher, Kate, engaged with the idea of changing her classroom from a position of standardization to sustaining families' codes and practices:

> And so, for me, what I think I've taken out of this book is that I really want to make a better effort at getting to know them. I like to do that obviously already, but even more so, and getting to know how they act and celebrating that in some way, because *I think* I know how they are, but I don't celebrate it.

Here, she described changes she would like to make to foster and celebrate diverse cultures in her classroom in the future by taking the time to get to know her students and families better as individuals.

Expectations

In order for the condition of *expectations* to be met, a learner must receive feedback that they are capable of mastering the learning at hand. These expectations are "messages that significant others communicate to learners" (Cambourne, 1995, p. 185) to build confidence and feelings of expected success Throughout the book club, there were many instances between the teachers of agreements, nods, and small notions of support. There was also an absence of negative feedback or negative reinforcement. The teachers supported each other as they questioned, grew, and learned. As the facilitator, I had to show the teachers they were capable of learning and changing as well. Sometimes I would directly reinforce then expand on a teacher's comment such as when I said:

> Chloe, I love that you said that we have to understand our own codes to be able to understand others first though, and I think that although Lisa Delpit doesn't explicitly say that, I think that's kind of what she's saying: that we all have codes, but maybe you didn't realize you had a code? Especially if you come from the codes of power.

My message to the group was that they were understanding and capable of applying this new concept of seeing families from positions of varying levels of power, not deficit. Later, Sofia shared a message of positive expectations as well when she talked about feeling capable of starting small, "I like your [Chloe's] philosophy of focusing on what kids you actually can reach…making a difference for just one." Here, she provided her colleague feedback that she can do it and helped her see that. The group reinforced each other's learning with positive feedback.

Responsibility

The condition of *responsibility* lies on the learner to "decide the nature of engagement" so that it "always serves a relevant purpose" (Cambourne, 1995, p. 185). This condition connects to engagement but goes further because Cambourne stated that "learners are left some choice about what they'll engage with next." This condition is particularly conducive to book club because the teachers choose what to talk about and when. I regularly posed ideas like, "I was wondering what stuck with you?" Often the teachers returned to conversations that were important to them such as advocating with, "sorry, one of the things to go back on [in] the book that I put a dot beside was…" When the teachers choose what to talk about and engage with, their learning was more for their own purposes, not driven by outside forces. Here, Jennifer, a White teacher, described struggling through understanding that some people are outside of the culture of power, "And I think that it's hard to do that, but I underlined that because I liked the way that she worded that, and it's hard to step out of your own and see it from, I mean you can't

see it from somebody else's eyes, but even to attempt to see it from how they are." The open-ended nature of the book club allowed for teachers to decide when and with what information to engage. In this engagement, we saw Jennifer building up her ability to see others differently through direct connection to the text.

Approximations

The condition of *approximation* is the notion that learners can try out their new learning with low levels of anxiety and low expectations of mastering the content. Cambourne (1995) described, learners are "not expected to wait until they have [whatever they are learning] fully under control before they are allowed to use it" (p. 186). Book club discussions can build trust amongst the members to lower levels of anxiety. Because these are not mandatory, those who are not comfortable do not have to return, which further indicates that those who do attend have lowered levels of anxiety about the learning. Not one teacher dropped out of the book club throughout our time together. Book club also allows for the text to be centered (as opposed to an opinion being centered) so the teachers can work through ideas based on the book and build off each other. Here, a Hispanic and White teacher, Charlotte, is trying out a new idea from Delpit (2006), while Dorothy and I build off her approximation:

> Charlotte: That made me think, coming from a parent, and she's also my friend, so it's not like, I don't see her as 'the annoying parent,' I see her as my friend who makes sense and is a good parent. So, it was interesting, and it makes me think, these kids that we have in our classroom, 'other people's kids,' have learned these behaviors that are not bad, they just are *different*, and they don't fit into the school mode.
>
> Dorothy: But maybe the school mode is -
>
> Charlotte: Wrong.

Dorothy: Broken.

Charlotte: Yeah.

Laura: Or just not accepting enough.

Here, Charlotte is not expected to have mastered the concept of "other people's children" (Delpit, 2006) but feels comfortable relating her new understanding to her classroom and life. Another teacher and I built on her approximation to reinforce and further her thinking.

In the exchange below, Kate, a White teacher, is working through an idea as she spoke to the group. In book club format, members are not expected to know exactly what the right answer is, but to build off each other's thoughts and responses. Through her false starts and broad questioning style, it's clear she is not confident in what she is saying but feels comfortable saying it anyway:

> I just, I think, you know, jumping off of what Charlotte was saying, we do a good job of trying to do that at the beginning of the year, you know, when we're doing all the 'getting to know you' stuff. And then, I think as teachers, we start to feel the stress of we need to start teaching, teaching, teaching as soon as we can, you know? And then we kind of lose that identity piece of the individuals and trying to get to know those identities because we get stuck in our tunnel vision of having to teach the curriculum and making sure that they get the curriculum. Now I, you know, I felt the same way when I was reading that, Charlotte. I want to figure out a way to bring more of them into the classroom, you know, and not make it so, not make it curriculum-driven, but, you know, just bring in who they are more to the classroom so that we can, you know, when we're planning and doing things, we can pull on their strengths and pull out those differences that make them, you know, people to learn from.

As Gay (2000) described, culturally responsive teaching "teaches *to and through* the strengths of these students. It is culturally *validating and affirming*" (p. 29). Here, Kate was clearly understanding the need to do this identity building all school year long, not just at the beginning, even if she was just trying out her ideas in this group setting.

Employment

Employment is the condition that the learner has "opportunities for use and practice" together with other learners and on their own (Cambourne, 1995, p. 186). The pacing of a book club allows for the learners to read, discuss, try new ideas out in their classrooms, and return to the ideas again the next session. With the lack of demonstration, true employment of culturally relevant teaching was hard to see here. However, there were times that the teachers directly connected ideas from the book to their own practice. Here, Charlotte described how since Covid began, she started to see families as more complete and strength-based than she had before, connecting to Delpit's (2006) idea that "children from other kinds of families [not upper and middle-class] operate within perfectly wonderful and viable cultures but not cultures that carry the codes or rules of power" (p. 25):

> And, you know, what I have to remember is that a lot of my parents…are capable of teaching their children, you know what I mean? I have this view that, and this is me just being completely honest, just from working for three short years, I have already a biased view that I am the only one that can teach their children the right way, you know? And it's like, no, you know? They have kids and they have a responsibility and I need to trust that.

This teacher was employing the concept of seeing families from "perfectly viable cultures" in her current struggles with suddenly finding herself teaching online. She was able to consider what

that trust and practice would look like and try it out. The realization here that families are capable is a basis of culturally relevant and further, culturally sustaining (Paris, 2012), teaching.

Response

The condition of *response* comes from the more knowledgeable others in the learning environment. Response is providing feedback "as a consequence of usage" and "supplying missing bits of the …approximation" (Cambourne, 1995, p.186). Often, I, as the facilitator, did this type of response, but the members did respond to each other's approximations as well. In a discussion about the culture of power (Delpit, 2006), I built off an approximation that a teacher had provided when I stated:

> And I think that's a great point about how the culture of power can change depending on where you are, right? The culture of power here is the southern power. It's still institutionally the middle-upper class White power, but here there's another layer of that where it's the actual southern culture is in power…

Above, I responded to her input and supplied information to push it to the next level of learning. In order to understand the culture of power and push back on it, teachers must learn its adaptability.

As with the previous discussion of essentializing, Dorothy, an African-American teacher, added to her peer's approximation thus modeling the condition of response. She stated, "exactly. Yes. And I don't want to be that. I just want to do what I'm doing. I don't want to be everybody's spokesperson, because I'm not. We don't think alike." This response allowed the other teachers to grow and personalize the information from the book and discussion about seeing communities from a position of strength. In book club, the teachers received peer and facilitator feedback based on sharing their ideas in the discussions.

Discussion

Learning to be more culturally relevant in the classroom is possible through the medium of a book club. By reading, discussing, and applying concepts of culturally relevant teaching, these teachers learned to see their students and families from positions of strength and wholeness. Many indicated changed perceptions and new awareness. One important caveat, however, is that although the book itself provided demonstrations of what culturally relevant teaching would look like, there were no physical demonstrations to observe as Cambourne (1995) would describe as necessary for learning. This leads to mixed results on the impact of book clubs as a method for professional development.

Preliminary findings show that the teachers did learn about and engage with culturally relevant pedagogies, however, without the real-life demonstrations of what culturally relevant teachers do and say, that learning may have been limited. Teachers did point to places where their viewpoints changed toward seeing families from positions of strength and wholeness, as well as changed perceptions of cultures and communities. However, without demonstration of those practices in an actual classroom, that learning did not necessarily result in changed practices.

In a previously conducted similar study (Szech, 2019) teachers participated in a book club type setting along with more directed professional development presentations. In that study, likely because of the direct demonstration by the facilitator, those teachers did clearly apply new practices. It is important to consider that book clubs can lead to new learning, but the teachers may need to see culturally relevant teaching demonstrated and modeled before them so that they may imitate that practice.

This study contributes to the overall understanding of teacher professional learning. Previous studies on professional, non-fiction, teacher book clubs did not outline how the method of a book club succeeds or fails in teacher development. This study shows that book clubs can be an important piece of teacher learning, especially because of the depth and breadth of the conditions for learning. This study outlined how each of Cambourne's conditions of learning (immersion, demonstration, engagement, expectations, responsibility, approximations, employment, and response) are not only present but woven throughout the format of a book club, leaving this method ripe for learning to occur. Future studies might consider how the condition of *demonstration* could be supplemented within a book club to further deepen the learning at hand.

Conclusion

In conclusion, professional book clubs can be the catalyst for new learning but direct interaction and observation with those who are engaging in culturally responsive pedagogy is necessary. Professional book clubs structured in this format provide the conditions of learning needed for sustainable change to take place through immersion, demonstration, and more. In addition to these book clubs, teachers need to see and work with those who are proficiently culturally relevant either in person or by video. To consider the broader implications mentioned in the introduction regarding the popularity of many White people joining book clubs after the murder of George Floyd, this study indicates that people can learn from reading and discussing with peers, however, without demonstration from a more knowledgeable other, there is less likely to be action. This study points to the need for book clubs paired with direct, guided, action. We need teachers, schools, and activists to lead the way to demonstrate, while those who read and discuss the books must engage and follow up to take the next level of action.

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Occupational Health and Safety in Schools: Investigation of Risks and Precautions via School Administrators' Experiences

Salih Yilmaz

Abstract

This research aims to reveal the risk factors that may emerge in schools and how to take precautions based upon the experiences of school administrators. A total of 15 school principals and 22 assistant principals working in kindergarten, primary, secondary and high schools in Turkey participated in this study. Research data were collected with semi-structured interviews and examined with content analysis. Findings revealed risk factors such as: plug sockets; doors and door handles; cabinets and sharp-edged items; stairs, stairwells and garden floors; elevators, equipment; windows and window glasses; goal poles for basketball and volleyball; lack of training; school environment; old buildings; garden walls and fences; cleaning materials and chemicals; lack of knowledge about emergency response, chronic diseases, and ailments; risky games; substance abuse; peer bullying; laboratories. Implications are provided about how to make school environments healthier and safer.

Keywords: occupational health and safety, OHS, hazard, risk, precaution, school administrators

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Introduction

With the increasing concern in the world for the health, safety and welfare of people in the workplace (Cox, 1988) and the development of the social state understanding, governments have started to create legal regulations for institutions to take the necessary measures on occupational health and safety (Arpa & Çakı, 2018). The issue of occupational health and safety is increasingly emphasized today given that the rates of occupational accidents and occupational diseases are at significant levels. It is, therefore, of great importance to reduce and prevent risks that may arise (Karacan & Erdoğan, 2011; Lundstrom et al., 2002; Uçkun et al.,2015). Determination and implementation of measures based on scientific studies in order to minimize the losses caused by occupational diseases and work accidents have become critical for the protection of institutions and employees from all kinds of hazards (Özkılıç, 2005). Nowadays, the number of international researchers and practitioners who are interested in reducing occupational health and safety (OHS) problems and threats in the workplace and improving individual and organizational health is increasing (Burke, 2019). OHS is vital to all organizations including schools and universities (Hughes & Ferrett, 2016).

School climate without violence, fear and anxiety is needed so that students, teachers and school staff can focus on education and training in a safe school environment and prepare for the future (Alver et al., 2016). One of the most basic conditions for the realization of learning in schools at the desired level and for achieving educational goals is to provide an educational environment where students and school personnel feel safe (Özer & Dönmez, 2007). Feeling safe at school can have positive effects on academic success and mental health among students, increasing classroom participation (Côté-Lussier & Fitzpatrick, 2016). Various studies have shown that the school climate, in which students feel safe, contributes positively to their

academic success and well-being (Cooper, 2013; Davis & Warner 2018; Kutsyuruba, Klinger & Hussain, 2015). Schools can start initiatives towards a healthy school environment for safe learning by making communication and relationships stronger between school stakeholders (students, parents, teachers, administrators), encouraging high academic expectations, and engaging families and students inside and outside the classroom (Davis & Warner 2018). It is predicted that the importance given to school safety in recent years will continue to rise in the future (Reid, 2020).

From time to time, accidents, diseases and even losses may occur in schools due to unhealthy and unsafe conditions. In order to prevent these undesirable situations, it is of vital importance to take protective measures in schools before accidents and diseases occur (Kök Sevdalı, 2019). Safety and health practitioners can consider taking a systems approach to mitigate risks. To reach acceptable risk levels, attention must be paid to hazards and risks in the system (Manuele, 2019). Hazard, in terms of health and safety, is any situation that has the potential to cause harm or damage (Baggett & Collins, 2013). Risk, on the other hand, refers to the probability of injury, damage or loss (statistical chance) (Laszcz-Davis, 2019). Similarly, risk can be thought of as the probability of adverse effects arising from an event or activity (Taylor et al., 2004). However, while the word 'risk' can be replaced by chance and probability, it can be used synonymously with hazard and threat in other situations (Rausand & Haugen, 2020). In this research study, the word risk is used synonymously with hazard.

Recent studies regarding occupational health and safety in schools cover topics such as trends and improvement strategies for ensuring school safety and preventing violence (Cohen, 2021); monitoring and improving the well-being and health of school administrators (Riley et al., 2021); disaster preparedness and safety school model (Widowati et al., 2021); school safety in

terms of occupational safety practices (Kandemir & Argon, 2020); school leaders during the Covid-19 pandemic (Pollock, 2020); occupational health and safety in national education (Van & Koç, 2020); occupational health and safety practices of school administrators and the problems that they face (Kök Sevdalı, 2019); consideration of risk factors and warning signs, determination of concerns, follow-up practices (Louvar Reeves & Brock, 2018); building schools' readiness for school safety (Kingston et al., 2018); occupational health and safety education, problems and solution recommendations (Ceylan, 2012); safety in secondary education organizations (Turhan & Turan, 2012); and the development of school safety research (Astor et al., 2010). It is challenging to examine all the factors that may influence the formation of health and safety at school and to take measures to reduce the negative effects of these factors (Özer & Dönmez, 2007). Therefore, the author of the present study, with the experience and observations he gained while he was working as a school administrator in charge of occupational health and safety, considers it significant to bring together possible risks and precautions in schools according to school levels based on the experiences of administrators, and so each study can contribute to occupational health and safety in schools. However, the literature shows that the number of studies with school administrators on occupational health and safety in schools is very limited. Apart from vocational and technical schools, it is seen that there is no study that deals with possible risk factors and measures for them according to school levels with school administrators.

The present research aims to determine the occupational health and safety risks in schools and to reveal the precautions that may prevent these risks from the vantage point of school administrators and the observations of the author. Therefore, it is expected that the research can contribute to the elimination of deficiencies by focusing on possible risk factors that may occur

in schools. Answers to the questions *"What are the risk factors faced by school administrators in kindergarten, primary, middle and high school within the scope of occupational health and safety? How can these risks be avoided?"* are sought in line with the purpose of the research

Method

Research Design

This research was conducted as a case study; a qualitative research approach in which the researcher gathers detailed information regarding real life, a current situation or cases in a certain time, and describes the situation and reveals themes (Creswell, 2013). In case studies, answers are sought to the questions of 'how' and 'why' (Yin, 2018). This study focuses on how to make schools healthier and safer by defining and preventing the risks. Thus, the research approach collected detailed information about the occupational health and safety risks that may emerge in schools and how to take measures against them.

Participants

The study group of the research consists of school principals and assistant principals working in kindergartens, primary, secondary and high schools in Nilüfer, Osmangazi and Yıldırım districts of Bursa province in Turkey. The participants were determined by purposive sampling method. Hereby, it was aimed to reveal the possible risks for schools from multiple perspectives. The participants were randomly selected from volunteers to participate in the research. Demographic information about the participants is presented in Table 1.

Table 1

Demographic Information Regarding Participants

Ps	Position	Gender	School Type	Total Number of Students	Total Number of Personnel	Teaching Seniority (year)	Administrative Seniority (year)	Number of Schools Worked
M1	Principal	Female	Kindergarten	51-100	11-50	11-15	6-10	1-5
M2	Principal	Male	High	101-500	11-50	11-15	6-10	1-5
M3	Principal	Male	Primary	101-500	11-50	11-15	6-10	6-10
M4	Principal	Female	Secondary	1001-1500	51-100	11-15	6-10	1-5
M5	Principal	Male	Secondary	101-500	11-50	11-15	6-10	1-5
M6	Principal	Male	Primary	1-50	1-10	11-15	6-10	6-10
M7	Principal	Male	Secondary	101-500	11-50	11-15	1-5	1-5
M8	Principal	Female	Kindergarten	101-500	11-50	11-15	6-10	6-10
M9	Principal	Male	Primary	501-1000	11-50	11-15	11-15	11-15
M10	Principal	Male	Secondary	1001-1500	51-100	21-25	16-20	6-10
M11	Principal	Male	Secondary	1501-1700	101-120	30 and above	16-20	1-5
M12	Principal	Male	Secondary	1501-1700	101-120	30 and above	21 and above	6-10
M13	Principal	Male	High	501-1000	11-50	21-25	6-10	1-5
M14	Principal	Male	Primary	1001-1500	51-100	16-20	6-10	1-5
M15	Principal	Female	High	501-1000	11-50	11-15	1-5	1-5
MY1	Asst. Principal	Male	High	501-1000	11-50	11-15	1-5	1-5
MY2	Asst. Principal	Male	High	501-1000	11-50	21-25	11-15	11-15
MY3	Asst. Principal	Male	High	101-500	11-50	5-10	1-5	1-5
MY4	Asst. Principal	Male	Secondary	101-500	11-50	5-10	1-5	1-5
MY5	Asst. Principal	Female	Secondary	501-1000	11-50	5-10	1-5	1-5
MY6	Asst. Principal	Female	Kindergarten	50-100	11-50	21-25	6-10	6-10
MY7	Asst. Principal	Female	Kindergarten	50-100	11-50	11-15	1-5	1-5
MY8	Asst. Principal	Male	Kindergarten	101-500	11-50	16-20	6-10	6-10
MY9	Asst. Principal	Female	Secondary	1001-1500	51-100	30 and above	11-15	11-15
MY10	Asst. Principal	Female	Secondary	1001-1500	51-100	30 and above	16-20	6-10
MY11	Asst. Principal	Female	High school	501-1000	51-100	11-15	11-15	6-10
MY12	Asst. Principal	Male	Primary	1001-1500	11-50	11-15	6-10	6-10
MY13	Asst. Principal	Female	High school	501-1000	51-100	11-15	1-5	1-5
MY14	Asst. Principal	Male	Secondary	1501-1700	101-120	5-10	1-5	1-5
MY15	Asst. Principal	Female	Secondary	1501-1700	101-120	21-25	16-20	6-10
MY16	Asst. Principal	Male	Secondary	1501-1700	101-120	11-15	6-10	1-5
MY17	Asst. Principal	Male	Secondary	1501-1700	101-120	21-25	6-10	1-5
MY18	Asst. Principal	Female	High	501-1000	11-50	5-10	1-5	1-5
MY19	Asst. Principal	Male	High	501-1000	11-50	16-20	11-15	6-10
MY20	Asst. Principal	Male	High	501-1000	11-50	16-20	1-5	6-10
MY21	Asst. Principal	Male	Primary	501-1000	11-50	21-25	11-15	6-10
MY22	Asst. Principal	Female	Primary	50-100	1-10	16-20	6-10	1-5

Table 1 indicates that the school administrators participating in the study provide sufficient diversity in terms of position, gender, school type, total number of students, total number of personnel, seniority of teaching, seniority of administrating and the number of different schools worked.

Data Collection and Analysis

The data of the research were collected with a semi-structured interview form. This form consisted of two parts, including demographic information of the participants and interview questions. The demographic information section of the form was intended to obtain information about the participants which is presented in Table 1. In the second part, there were interview questions about what school administrators perceived as occupational health and safety risks in schools and what precautions were needed. The interview questions were reviewed by two experts in the field of education administration and an OHS expert, and then the questions were edited before the interviews. Additionally, the study was also informed by two-year longitudinal observations by the author who was a school administrator responsible for occupational health and safety. Observation can be used as a data collection tool in any social or institutional setting that the researcher deems appropriate (Yıldırım & Şimşek, 2011). The author took note of the factors when observing possible risks regarding OHS in a school setting, and presented this knowledge and experience throughout the research.

In order to collect the research data from the school principal and assistant principals, interviews were conducted with the study group specified in Table 1. Some of these interviews were completed face-to-face and some by phone or Zoom. The interviews lasted approximately 35-50 minutes. Notes were taken during the interviews and inputed to the computer. In the coding of the research data, abbreviations such as M1, M2 for school principals and MY1, MY2 for assistant principals were used. Content analysis technique was used to examine the data. The content analysis can help the concepts and relationships explain the collected data (Yıldırım & Şimşek, 2011). In this study, the data obtained from the school administrators were integrated by

first presenting the situations related to each other under risks as themes, and then explaining the measures related to these situations.

Reliability and Validity

Validity and reliability are considered in terms of ensuring the credibility of the qualitative research (Lincoln & Guba, 1985). The views of the participants are given with direct quotations when necessary in order to increase credibility. Principals and assistant principals as school administrators were selected from different school levels (kindergarten, primary school, secondary school, high school) and worked in different schools. In addition, the number of students and staff in the school where they work varied, as well as the differences in the seniority of teaching and administrating of the participants. In addition to these, female school administrators were included in the study as much as possible, thereby increasing the variety of perspectives and data. To ensure data control before the analysis, member checking data confirmation was conducted by 12 participants (3 school principals and 9 assistant principals). Finally, the findings were presented to two OHS experts for thematic analysis. Thus, the themes and suggestions within the scope of the research were checked and the study was examined as a whole. Experts stated that the study was appropriate in terms of occupational health and safety practices.

Results

In this section, answers to the following questions, which were created in line with the purpose of the research, were sought within the scope of occupational health and safety: *"What are the risk factors faced by school administrators in kindergarten, primary, middle and high school within the scope of occupational health and safety? How can these risks be avoided?"*

Factors that school administrators consider as risks within the scope of OHS in kindergartens and their views on how to prevent them are presented in Table 2.

Table 2

OHS Risk Factors and Measures in Kindergartens

Risks	Measures	Participant
Fall, bump and stairs	Protection tape or sponge to the corners, use of curved materials instead of pointed angular materials, window protections against fall, building schools single-story, railings and nets to stairs, non-slip tape on stairs	M1, MY6, MY7, M8
Pandemic, disinfectant	Attention to mask and hygiene; disinfectant use under teacher control	MY6, MY7, MY8
Plugs	Positioned high and protected from children's reach	M1, M8, MY8
Door and door Handles	Door opening with controlled mechanisms, flat plastic door handles	MY6, MY7
Only one exit	Building emergency exit doors	M1, M8
Cabinets and items	Fixed to the wall and not high, goods that do not exceed the student height	MY7, MY8
Floor	Soft floor like flex or wooden parquet instead of concrete, not using carpets for hygienic reasons	M8, MY6
Boiler room	Building it away from school building	M8
Truancy	Teacher control	M1

As shown in Table 2, risk factors in kindergartens can generally include falls and bumps in sharp goods or wall corners, stairs, windows, etc. In addition, it has been stated that disinfectant, plugs, doors and door handles, single entrance to the school, cabinet, carpet, and floors can be risky in kindergartens. In this context, M1 shared her measures as "... protective tape or sponge can be placed to the corners; non-slip tape on the stairs" while MY7 stated "... using security locks in windows; preferring curved items over sharp ones..." Some of the statements of other school administrators are as follows: MY6, "disinfectants must be locked in the closet or used under teacher control"; MY8, "items should not be too high [to guard] against children climbing and must be fixed to cabinets…"; M8 and MY8, "electrical outlets must be protected." M1 discussed precautions for risks associated with the expression of "plugs should be

located high," while MY6 and MY7 indicated that door opening mechanisms should be arranged to prevent rapid closing and door handles must be flat. Kindergarten school administrators have also highlighted some measures such as schools having multiple entrances and exits, having the boiler room in a separate place, having the bolt of the outer door up, and covering the floor with flexible or wooden material instead of carpets.

Second, the experiences of school administrators within the scope of OHS risk factors and measures in primary schools are revealed and presented in Table 3 below.

Table 3

OHS Risk Factors and Measures in Primary Schools

Risks	Measures	Participant
Doors and door handles	Door fixing mechanisms for only teacher use, flat door handles	M3, M6, M14, MY11
Stairs, windows and sinks	Non-slip tape on the stairs or anti-slip section-hollow, safety lock on the windows, appropriate sinks to age groups	M3, M14, MY11, MY21
Fall, bump and floor	Warnings, teacher preparation with first aid for students' falls, the floor should be soft material, non slippery ground	MY11, M6, M3, MY4
Number of floors	The school should be in a large area, and each class level should be in a separate building; buildings should have a maximum of 2 floors, horizontal architecture instead of vertical	M9, MY11, MY22
Pandemic, disinfectant	Following mask, distance and hygiene rules, storage of disinfectant in teacher's locker	M9, MY4
Cabinets	Embedded into or fixed to the wall	M3, MY4
Canteen	Healthy foods for children and regular inspection of the canteen	M6, M9
Electrical outlets	Electrical outlets are protected, locked	M6, M14,
Vehicle entry, density at exits	Vehicle entry into the school is blocked during school time, students go out under teacher control in crowded schools	MY21
Heating stove	Cage around the stove, cleaning of stoves, pipes, chimneys	MY22

OHS risks in primary schools listed in Table 3 include: door and door handles; stairs, windows and sinks; fall, impact and ground; and the number of floors and others. Accordingly, for the risks associated with the door: M3 said, "... mechanisms must be installed so that the doors can be fixed to the wall when the teacher leaves the classroom for young-aged students"; M6 stated that, "door handles should be embedded" and MY14 stated that, "door handles should be

replaced with flat ones.” Additionally, several administrators expressed concern about water causing slip and fall accidents. In the words of MY21, "sinks should be cleaned and the wet floors must be dry for next break.” MY11 evaluated some situations for falls and bumps such as "in case of possible accidents, the response team, the staff may be untrained. Even if the staff is trained, they can freeze when something bad happens...." Therefore, "training and exercise frequency should be increased" were emphasized by the M6 and M3 in order to be prepared. On the other hand, MY22 shared the view that, "primary schools should be built with horizontal architecture, not vertical architecture, and have one floor.” MY4 listed his suggestions as follows: "coating floors with materials that are not too hard such as wood; frequent warnings should be given to students about masks, distance, hygiene; disinfectant should not be left out without teacher supervision; cabinets should be fixed to wall.” Emphasizing the importance of canteen inspection, M9 mentioned:

> recently it appeared in the news, that a student died as a result of the syringe chocolate cap sold in the canteen going into the student's windpipe. So, canteen inspections should be carried out frequently and special products should be produced for schools.

M6 also emphasized the protection of the sockets. MY21 stated that, "school exits should be in order and under teacher control, and vehicle entry should be prevented during school time...” Finally, for schools with stoves, MY22 stated her recommendations for risks such as "the heating stove must have protective parts, and the necessary cleanings for stove parts and ventilation should be carried out properly.”

Third, the experiences of school administrators within the scope of OHS risk factors and measures in secondary schools are revealed and presented in Table 4 below.

Table 4

OHS Risk Factors and Measures in Secondary Schools

Risks	Measures	Participant
Stairs, stairwell and garden floor	Non-slip tape, warning sign, net across stairwell, providing the appropriate floor and space for the physical education course, soil and grass instead of concrete for garden floor	M5, M7, M11, M12, MY5, MY10, MY14, MY17
Bringing dangerous goods	Identifying and taking precautions against smoking, lighters, sharp tools that may cause injury, variable interval control	M7, MY5, MY16
Plumbing, boiler, elevator, equipment	Maintenance and repair of electrical, water, fire extinguisher, fire tube, boiler, elevator, classroom equipment	M5, MY9, MY17
Desks, boards and cabinets	Fixing all the boards and cabinets to the wall, preferring curved materials instead of sharp, angular ones	M7, M11, M12
Windows and glasses	Replacement of broken, cracked windows, not using glass in classroom cabinets, window or cabinet glasses resistant to breakage	MY5, MY9, MY17
Epidemic or pandemic	To provide and implement the requirements of school health procedures, to follow the diseases of students and staff	M4, M5, M7
Doors	Installing mechanisms for slow opening and closing of all doors in the school, control of door hinges	MY10, M11
Goal, basketball etc. poles	Checking their stability and endurance	M11, MY17
Lack of training	To provide training to students, teachers and all staff on occupational health and safety	M10, MY10
School exits and school environment	Ensuring control by security personnel to prevent density or fights	M11, MY16
Old buildings	Making physical improvements or renovating old schools	M10, MY17
Garden walls and wires	Avoiding the use of barbed wires, different measures to prevent student truancy or outsiders	MY15, MY17
School entrance	Creation of security points and security turnstiles in overcrowded schools	MY10
Cleaning materials and chemicals	Cleaning materials and chemicals must be kept closed, locked out of the reach of the student	MY9
Crowded classrooms	Increasing the number of classrooms with building new schools	M12
Chronic diseases, disorders, lack of information about emergency response	To know if all students and employees have any ailments, to take the necessary precautions, to have medical personnel in the school	MY9
Canteen	Regular and frequent inspections in terms of hygiene and food and drink	MY5
Spare classes that the teacher is absent	Ensuring teacher supervision for these classes. Assigning a teacher on duty or available to classes	MY17
Risky games	Training against bullying games such as throwing in the air, chasing, and controlling with teachers	M4

In Table 4, the situations that stand out as OHS risks in secondary schools are about stairs, stairwells and floors; bringing dangerous goods to school; plumbing, boiler, elevator, equipment; rows, boards and cabinets; windows and glasses; epidemic or pandemic; doors; goal poles for basketball etc.; lack of training; school exits and school environment; old buildings; and garden walls and wires. In addition, cleaning supplies and chemicals, crowded classrooms and lack of knowledge about chronic diseases, disorders and emergency response, canteens, spare classes and risky games are also seen as risks by secondary school administrators. In this context, M11 said, "Stairwells should be protected via a net and non-slip tape should be placed on the stairs." M12 stated, "... soil and grass should be the placed in gardens [to guard] against falls and injuries.." According to MY5, the statement "dangerous goods are brought to the school... with variable intermittent control..." was critical. M5 thought, "it is vital that the necessary maintenance repairs for plumbing, elevators, etc. are carried out in a timely manner." MY17 mentioned "regular control of the poles and goalposts in the schoolyard against falls" while M7 stated that "all cabinets and boards in schools should be affixed." M12 shared that "desks should be curved" while MY9 advised that "all windows in schools must be resistant to breakage."

MY10 told an anecdote that "doors must have mechanisms that close slowly. I witnessed a student's finger break as a result of getting stuck in the door." So, accidents reveal the importance of these issues. Regarding the breaks, M4 shared that "... all procedures must be followed, and it is of great importance that everyone follows the health and safety rules." In addition, MY9 also explained that "students' chronic diseases or lack of knowledge about responding to an emergency can be seen as a risk to the health of those students, so medical personnel may be assigned to schools for this situation." Similarly, M11 said that "risks

associated with school exits and surroundings can be ensured with security personnel to the places necessary."

Finally, the experiences of school administrators within the scope of OHS risk factors and measures in high schools are revealed and presented in Table 5 below.

Table 5

OHS Risk Factors and Measures in High Schools

Risks	Measures	Participant
Stairs, stairwells, window, floor	Non-slip tape on the stairs, protective net for the stairwells, safety apparatus to prevent falling from the windows, warning signs	MY1, MY3, M13, MY19, M2, MY20
Substance abuse	Raising awareness, setting good examples and providing support	M2, M13, M15, MY19
Epidemic or pandemic	Warnings about masks, distance, hygiene, taking necessary precautions	M2, MY1, MY13
Breaks and teacher absent classes	Planned appointments of available teachers for classes	MY2, MY13
Machinery, installation, maintenance/repair	Periodic inspection, maintenance and repairs for boilers, elevators, electrical installations, etc. Requesting a budget for appropriate risks rates from the occupational health safety module	MY11, MY20
Bringing dangerous tools to school	Creation of control mechanisms for the removal of cutting, piercing, flammable, electric tools	MY1, MY3
Peer bullying	Organizing training and activities to prevent bullying	MY2
Parents' interventions with other students	Solving the problems between students in school, minimizing family interventions	MY18
School entrances and exits	Control of school entrances and exits with security personnel where necessary, preventing foreigners from entering the school	MY3
Canteen- food and drinks	Following hygienic rules, checking the storage conditions of products that will deteriorate quickly	M15
Laboratories	Taking precautions such as goggles, aprons, eye showers, showers. Storing and locking chemicals properly	MY11

The OHS risks in high schools in Table 5 are related to stairs, stairwells, windows, floors; substance abuse; epidemic or pandemic; breaks and teacher absent classes; machinery, installation, maintenance/repair; bringing dangerous tools to school; peer bullying; parents' interventions with other students; school entrances and exits; and canteen food and drinks; laboratories. Among the participants who expressed the measures to be taken against the related

risks: M13 said "non-slip tape on stairs and nets should cover the stairwells..."; MY19 expressed "... classrooms need to be ventilated properly, besides a safety apparatus should be installed to prevent falling"; and M2 stated "warning signs should be placed in the necessary sections such as wet floors, electrical installations, etc." MY19 considered substance abuse as a risk in high school students and asserted "... awareness-raising activities can be carried out in schools and support should be provided to students with substance abuse to help them quit." M2, MY1 and MY13 emphasized the importance of mask, distance and hygiene in epidemic or pandemic situations, while MY2 and MY13 pointed out that possible risks about teacher absence from classrooms can be avoided with the support of other teachers. MY2 suggested psychological support to the victims, school rules and training to prevent peer bullying. Furthermore, MY18 mentioned that the inclusion of families in the problems experienced among students will make the events complicated and stated "... problems between students can be solved at school first according to the situation...." MY13 indicated security personnel and inspections as a key measure, "to prevent bringing dangerous tools being brought to the school, and problems at school entrance and exit." Finally, M15 emphasized "the conditions of preservation of foods sold in the canteen...", and MY11 shared the measures needed in the laboratories.

Discussion and Conclusion

The present research, risks and precautions are discussed on the basis of the experiences of school administrators to ensure occupational health and safety in schools. At the end of the research, possible risks are revealed according to school levels and the measures to be taken against them can be considered holistically with the thought that they will complement each other.

First, risks for kindergartens are expressed by the administrators working in these schools as follows: falling, crashing and stairs; epidemic, pandemic and disinfectant; sockets; door and door handles; single entry-exit to school; cabinet and furniture; ground; boiler room; truancy. Then, primary school administrators express the following risks: doors and door handles; stairs, windows; sinks; falling, crashing and ground; number of floors; epidemic, pandemic, and disinfectant; cabinets; canteen; electrical outlets; density of vehicles entering and exiting the school; heating stove. Next, in secondary schools, the risks that administrators see are about stairs, stairwells and garden floors; bringing dangerous goods; plumbing, boiler, elevator, equipment; desk, board and cabinets; windows and glasses; epidemic and pandemic; doors; goal and goal posts; lack of training; school entrance, exit and school environment; old buildings; garden walls and wires; foreigners entering the school; cleaning supplies and chemicals; crowded classrooms and dual education (full day schools); chronic diseases, ailments, lack of knowledge about emergency response; canteen; lessons when teachers are absent; risky games. Last, the risks stated by school administrators working in high schools are listed as follows: stairs, stairwells, windows, floors; substance abuse; pandemic-Covid 19; breaks and classes when teachers are absent; machinery, installation, maintenance/repair; bringing dangerous tools to school; peer bullying; interventions by parents with other students; school entrances and exits; canteen - food and drink; laboratories.

It is important to investigate these risks one by one and take measures for safe and healthy schools. In this context, schools can make self-assessments to prepare for multiple hazard threats such as those arising from natural disasters, the absence of a security system, and acts of violence against children (Widowati et al., 2021). Students in these school levels are of differing physical and cognitive abilities. Therefore, issues should not be summarized generally

but rather investigated and remediated with the unique attributes of children in each building level.

In a similar study (Kök Sevdalı, 2019), falling (window, roof, etc.), poisoning (smoke, food, milk, mercury, etc.), falling pieces from the ceiling, the door handle being stuck in the student's arm, fire in the electrical panel, the overturning of the goal post, and school bus accidents have been grouped as various accidents that occur in schools. The problems encountered in occupational health and safety in schools were expressed as the absence of fire warning system, windows that do not open halfway, the absence of safety nets on the stairs, electrical sockets with child protection, and the drinking water analysis and periodic controls (electrical installation, machinery) in schools. In another study conducted with school administrators (Çay, 2019), the possible risks and dangers are listed as the absence of window locks, electrical outlets, slippery floors, and pointed corners of the tables and the precaution of placing warning signs against these risks are emphasized. In the same research, administrators state that afixing school cabinets to the wall, installing a fire alarm system, constructing a ramp for the disabled, and the training given to administrators and teachers are essential. As a matter of fact, occupational accidents, which seem unlikely to be solved by traditional methods such as legislation and auditing, are a multidimensional problem and are mostly caused by human-induced reasons. Therefore, education and training have an important place in occupational health and safety (Ceylan, 2012). In a study (Memduhoğlu & Taşdan, 2007), problems related to school safety are discussed, and the study lists problems such as violence, use of tools and equipment, school environment (space), natural disasters, fire and accidents, and mentions about the necessary precautions for creating a safe school. However, in the research study by Kök Sevdalı (2019), 91 school accidents occurred in primary, secondary and high school level

schools. These came to the agenda in the national media between 2013 and 2018, showing that events experienced are about poisoning, electricity, fire, neglect, service, natural disaster, carelessness, violence. According to Dönmez and Özer (2009), problems related to school safety are also bullying; theft; use of cigarettes, alcohol, drugs, inhalants; school gangs (bringing tools such as guns, knives, razors to school), crisis situations and earthquakes. In that study, approaches to solving the school safety problem are examined under the titles of police model, school climate-culture, security plan, and also focused on planning and management of crisis in schools, beside roles and responsibilities related to school safety.

The measures that can be taken to mitigate the possible risks in the scope of occupational health and safety in schools can be listed with the perspective of school levels as findings complement each other. These common risks include that flammable, caustic, corrosive chemicals and materials required for the experiment should be properly stored in locked environments. The machine and equipment must be controlled and maintained on time by authorized services. It is important to check the stability of cabinets, balustrades, sinks, plates, frames, to ensure that electrical sockets and switches are protected and stable, that electrical panels are locked, that electrical cables are not left outside, fire-fighting valves and alarms, equipment controls, and that maintenance and repairs are secured properly. Applying non-slip tape to the stairs, covering the net to prevent falling into the stairwells, fixing the protrusions that may cause falling on the school and garden floors, checking the stability of the walls, tree branches, basketball hoops, poles of goals, volleyball, school entrance-exit doors and hinges of all school doors are among the crucial precautions. Additionally, it is significant to install corner protectors on the ledges with sharp corners and risky corners of the desk, table, heater and poles throughout the school or not to use angular materials, and to fix the cabinets, bookcases and

boards to the walls. Moreover, the installation of safety locks on the windows or security panels that do not prevent ventilation due to the pandemic, the use of door mechanisms that can be fixed to the wall and opened by the teacher to prevent door slams, the installation of slow opening and closing mechanisms, replacing the protruding door handles with the ones with flat grooves embedded in the door can prevent the possible related risks in schools are helpful.

Events such as outside interventions, student fights, school gangs, physical violence between students and teachers, accidents, suicide, and theft affect the school climate negatively, threaten students and school stakeholders both physically and psychologically, and undermine trust in the school. In addition, it is necessary to create a healthy and safe school environment that the physical elements in the school do not pose a risk, and the food served and consumed at the school must be sanitary and clean (Turhan & Turan, 2012). In the studies, a series of problems related to physical activity, nutrition, tobacco and alcohol use, violence, bullying, mental health, hand washing, multiple risk behaviors and oral health are discussed in terms of students' health (Langford et al., 2014). Moreover, it has been understood that some health problems such as vision, asthma, adolescent pregnancy, aggression and violence, physical activity, breakfast, inattention and hyperactivity also affect students' motivation and learning ability (Basch, 2011). There are also studies showing that physical activity and team sports activities have a positive relationship with students' academic achievement (Fox et al., 2010). Therefore, it can be interpreted that efforts on occupational health and safety in schools may have a positive effect on students' health and safety, which in turn may have a positive effect on students' learning and academic success.

Schools need to become environments against all kinds of risks and to become places away from dangers. Since it is not possible for a single group to overcome this task,

governments, society, family and school administrations should work together (Akyol, 2015). School principals, who have the primary responsibility in the effort to reach the goals determined at the school, have difficulties in finding resources, implementing and improving the existing conditions within the scope of occupational health and safety. They also have increasing workload and legislative pressure (Cereci & Çetin, 2019). In a study that draws attention to this situation, school administrators stated that they could not allocate enough time to OHS practices due to the appropriation, legislative knowledge and workload related to OHS (Kök Sevdalı, 2019). In today's conditions, leaving the responsibility of OHS to school administrators actually makes it difficult to implement OHS in schools effectively, because it is not possible for administrators to be a professional in a specialty that requires expertise such as OHS, in addition to an increasing workload this responsibility entails. Therefore, it is of great importance for the stakeholders to work together in schools under the leadership of occupational health and safety experts.

Establishing an occupational health and safety culture in institutions is needed to follow the developments in the country and the world regarding OHS, take precautions against risks, and intervene correctly in the events that may occur (Hasanhanoğlu, 2020; Karacan & Erdoğan, 2011). In this respect, the Ministry of National Education in Turkey emphasizes that a safe lifestyle can be a part of the culture through education, and attaches importance to participation of student, teacher, parent and other staff by raising awareness in order to transform health and safety culture. There is emphasis on creating school clubs and teams regarding health and safety for creating awareness of the society and ensuring social development. The relevant regulations of Ministry of National Education suggest establishing school clubs focused to health and safety, and disaster preparedness clubs. In addition, schools can form teams for occupational health and

safety and civil defense to carry out their activities in accordance with the annual plans, under the coordination and supervision of occupational health and safety units (MoNE, 2021). It is possible to imply that school administrators are expected to make the efforts to establish the school clubs, to organize the OHS related events, and to spread the awareness of occupational health and safety to the whole school.

Limitations and Implications

Stress and burnout are given as factors that will increase health and safety risks in the workplace, and the data on the negative effects of these situations on the health of individuals both physically and psychologically have increased in recent years (Cohen, 2021; Uçkun et al., 2015). The present study, on the other hand, was carried out in order to draw conclusions that will prevent physical risks to students, teachers, non-educational staff and school administrators. Occupational safety and health risks in schools can be addressed with the psychological aspects and out-of-school settings in future research. The other limitation of this research is that it cannot provide a detailed analysis of boarding schools, schools where transportation is required, vocational and technical high schools, food-provided schools and special education schools, because these schools have their own risks and each type needs to be handled individually. Aside from these limitations, the current research results provide suggestions for policy makers, practitioners and researchers to reduce the possible risks for kindergarten, primary, secondary and high schools in general, including the mentioned schools. More detailed research can be done according to school types. Thus, possible risks can be prevented and schools can be safer and healthier for all stakeholders of schools.

To make significant improvements in OSH in their schools, school leaders must commit themselves to consult with staff, identify, prioritize, and act on key issues (OHS in School,

2017). Risk assessments, which have an important role in preventing occupational health and safety risks, are seen as the starting point of the health and safety approaches. If the risk assessment process is not done properly, it is not possible to identify or implement preventive measures (Manuele, 2019). In this context, school administrators are responsible for many duties such as education, accommodation, canteen etc., and not very familiar with the specialty of OHS. That may lead to the possibility of being blind to the risks, and not being able to notice some hazards due to working in the same environment, and not evaluating schools as an expert. (Kök Sevdalı, 2019). Therefore, in addition to OHS expert inspections, school risk assessment teams can make risk assessments at different neighboring schools and advise each other. An occupational health and safety specialist, health worker and security personnel should be assigned to every school or shared among schools in close proximity to each other. By collecting and analyzing information about accidents, diseases and near miss situations during a year, checklists and precautions can be shared with all schools in order to prevent possible risks.

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Reflections on Remote Mentoring: Is This the Future of New Teacher Support?

Rose Jagielo-Manion and Tina Selvaggi

Abstract

The Covid-19 pandemic required teacher preparation programs to shift and think creatively about how to best support their teacher candidates, recent graduates, and graduate students. In response to these challenges, in Fall 2020 the authors developed a remote mentoring partnership between first-year teachers and graduate students enrolled in a reading specialist/leadership course at their university. The graduate students served as mentors to the first-year teachers (mentees) as they navigated the journey of not just being a new teacher, but doing so in the midst of a pandemic. Reflections on what this mentoring partnership looked like, topics explored and perspectives of both mentor and mentees were shared and analyzed. Partnerships similar to the one described in this article can serve as a potential model for teacher preparation programs, especially as schools confront the aftermath of the pandemic and the burgeoning teacher shortage.

Keywords: Mentoring, remote mentoring, teacher preparation, beginning educators

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Kent, Green, and Feldman (2012) suggested that, since all members of a school system have a vested interest in the success of new teachers, mentoring should be viewed as a responsibility not just a choice. This sentiment became even more apparent and critical in response to the Covid-19 pandemic as this responsibility for new teacher support expanded beyond a specific school's walls or district boundaries and into the teacher-education programs from which these first-year teachers graduated in Spring 2020. Schools, districts, and universities were forced to rethink and revise their previous views of mentoring as they encountered the many new challenges and unknowns brought forth from the pandemic. This article discusses how one Pennsylvania university implemented a remote mentoring partnership between Spring 2020 graduates in their first year of teaching and graduate students during the Fall 2020 semester.

Purpose

The university where this remote mentoring partnership occurred is a public university located in a Pennsylvania suburb with more than 17,000 undergraduate and graduate students. The university is accredited by the Council for the Accreditation of Educator Preparation (CAEP) and prepares undergraduate and graduate students to be effective educators. Due to the pandemic in spring 2020, student teachers placed in K-8 classrooms and working to achieve elementary or middle school certification moved from an in-person capstone experience to remote student teaching. In response, the university, college, and department worked to ensure student teachers met the Pennsylvania Department of Education (PDE) competencies through other sources, such as modified projects and/or remote collaborations. PDE recognized the challenges presented by the pandemic and required universities to provide support to first-year teachers during the 2020-2021 school year. This article describes a collaboration between two university supervisors who developed opportunities for graduate students to authentically apply

concepts learned in a Reading Specialist/leadership course while mentoring the recent spring 2020 graduates from the undergraduate elementary and middle school certification program. No mentoring system was in place at the university level for recent graduates because Pennsylvania requires districts to provide a yearlong new teacher induction plan for first year teachers. This project was in response to the pandemic, but also has value moving forward.

Description of Participants

For this remote mentoring partnership, the university supervisors collaborated to create a mentoring plan between M.Ed. students working towards a Reading Specialist certificate and recent graduates of the undergraduate program. In summer 2020, recruitment of first-year teacher participants occurred through email and a survey. As a result of recruiting efforts, 12 first-year teachers expressed interest in being mentored and were paired with two graduate students each for ongoing remote mentoring from September through December 2020. Due to attrition, the final number of first-year teacher participants was 11. In December 2020, mentors and mentees engaged in reflection on the partnership and feedback was collected.

Mentee participants came from a variety of teaching contexts, including suburban and urban public and charter schools in four different states. Mentees taught various grade levels spanning kindergarten through sixth grade in remote, hybrid and in-person modes. See Table 1 for specific information regarding mentees' teaching contexts.

Table 1

Mentee Participants

School	Grade Level	Location	Mode of Instruction
Public - 8	Kindergarten - 1	PA - 8	In-person
Charter - 3	K-1 Special Education - 1	NJ - 1	Hybrid
	1st - 4	FL - 1	Fully remote
	3rd - 2	TN - 1	Mixed (changed)
n = 11	4th - 1		
	5th - 1	Suburban	
	6th - 1	Urban	

Description of Course/Requirements

The 23 graduate students (mentors) were enrolled in a course entitled Organization & Supervision of Literacy Programs K-12. This course is a practical application of the reading specialist's role in organizing and operating a school literacy program in a K-12 environment. Application of literacy leadership, coaching/mentoring, adult learning, and the change process are the goals of this course. The mentoring project offered an opportunity for the graduate students to apply the course concepts despite the limitations of the remote learning environment during fall 2020. Several requirements, based on professional learning research in the areas of Change Process/Stages of Concern (Hall & Hord, 1987) and effective models of professional learning (Darling-Hammond, et al., 2009) were incorporated into the project for the course. The mentoring requirements were for the mentors/mentees to meet remotely at least three times, apply and integrate course components, keep a facilitation log, and respond to reflection questions about the mentoring experience.

Data Collection and Analysis

In order to gather feedback from participants after the semester-long partnership, various data collection instruments were utilized. A Qualtrics survey was sent to all mentees to learn more about their individual teaching contexts, the type of mentoring in which they engaged, and their future professional goals based on the mentoring experience. The mentee survey contained six open-ended questions, including questions regarding current teaching context, motivation for participation, mentoring topics, support the mentoring provided, timing of mentoring, and results of the mentoring. Mentees were also asked to reflect on how the mentoring affected their teaching practice and professional goals they set based on this experience. Seven mentees completed the Qualtrics survey. See Table 1 for information related to mentees' teaching contexts.

As part of the graduate course, mentors were required to complete a facilitation log and a reflection paper about their experiences with mentoring. The facilitation log required in the graduate course asked the mentors to list the type of interaction they had with mentees, the purpose and next steps, and connections to the Stages of Concern (Hall & Hord, 1987). Because effective professional learning should be job-embedded and presented through multiple exposures (Darling-Hammond et al., 2009), the facilitation log was designed to foster meaningful interactions over the time period of the entire semester. The reflection questions encouraged the mentors to integrate the course standards while reflecting on how the course learnings impacted their mentoring throughout the semester. The questions asked the mentors to think about their ability to collaborate as well as their use of interpersonal communication, and leadership skills. As a look to the future, they were asked to consider their subsequent plans for professional learning as a literacy leader.

Findings

Analysis of mentee and mentor responses on the data collection instruments revealed that the following topics were addressed throughout the mentoring partnership: classroom management, planning and preparation, meeting the needs of all learners, remote learning/technology, classroom environment, and specific content instruction. Classroom management was the topic most discussed, with five groups choosing that topic. Planning and preparation, meeting the needs of all learners and remote learning /technology were discussed by four of the groups, and classroom environment and specific content material were topics discussed by three of the groups. Table 2 presents the frequency of each topic and the sections below describe how mentees and mentors addressed specific themes within these overarching topics.

Table 2

Frequency of Topics Addressed in Partnerships

Topic	Number of Mentee/Mentor Partnerships
Classroom Management	5
Planning and Preparation	4
Meeting the Needs of all Learners	4
Remote Learning/Technology	4
Classroom Environment	3
Specific Content Instruction	3

Classroom Management

Classroom management is often a challenge for first-year teachers. In fact, findings on the U.S. Department of Education's (2019) Schools and Staffing Survey revealed that 43.8% of first-year teachers felt limited to no preparation related to classroom management (Shank & Santiague, 2022). Not surprisingly, this was a topic addressed in five mentoring partnerships based on mentee survey responses.

Mentors shared classroom management strategies and resources for mentees, including line-up songs for transitions, incentive charts, and positive reinforcement charts/buckets. As student engagement became a management concern during remote and hybrid instruction, mentors shared ideas such as a wheel of names technique and how to incorporate sensory tools to help mentees' improve student engagement. One mentee even found that the new classroom management system that they implemented as a result of discussion with their mentors not only supported student engagement, but also resulted in an increase in student motivation and test scores.

Instructional Support

According to Andrews and Quinn (2005), one responsibility of mentors is to aid first-year teachers with curriculum and instruction, specifically in the areas of planning lessons and providing constructive feedback. This type of instructional support took many forms for the mentors and mentees in this partnership. Mentors curated materials related to guided reading and differentiation for their mentees. Mentors also helped mentees to develop a schedule for meeting with their K-6 students in small groups in an equitable manner and to plan independent stations and centers while small group instruction occurred. Lastly, mentors supported mentees with their unit and lesson planning and in the creation of writing rubrics for assessment.

Technology Integration

During the mentoring process, mentors must endeavor to create ample opportunities where knowledge is co-constructed in both 'inside' and 'outside' learning situations rather than being imparted (Schwille, 2008). This was especially evident during this semester when teachers made a quick switch from in person to hybrid/online learning. Both mentors and mentees were concerned about maintaining and building the community of learners in their classrooms. Much of the advice mentors shared with mentees included strategies they were currently trying. The mentoring pairs were able to honestly and in "real time" share successes and/or challenges they were experiencing in their own classrooms. Excellent examples of using technology to engage learners were shared and demonstrated. These included Nearpod, Jamboard, Google Suite, and Classkick.

Additional Areas of Mentoring

According to Godshalk (2007) and Ensher and Murphy (2007), an e-mentor provides a career development function in promoting professional growth by providing challenging assignments, exposure, visibility, and protection via computer-mediated communication (CMC) interactions. The e-mentor also fulfills a psychosocial function in promoting personal growth by providing emotional support, counseling, acceptance, and guidance. This was evidenced in additional areas of mentoring mentioned in the surveys. Many mentors had valuable conversations helping mentees understand who to approach in their building for support as well and how to advocate for themselves. During the pandemic, self-care was very prevalent in everyone's mind and this was also the case for the mentors and mentees. They shared ideas and suggestions for developing a healthy work-life balance and practicing self-care while still meeting the myriad of responsibilities that accompany hybrid/online teaching. Other timely

administrative management tasks, like preparing for parent teacher conferences, were also discussed as situations arose throughout the semester.

Technology also helped the mentor and the mentee to be connected through messages and emails, share their schedule, and plan their meetings. This mentoring relationship, especially through technology in today's hi-tech world, provided the professional development support needed to promote opportunities for modeling the curriculum integration of technology, redesigning lessons around technology-rich resources, and overcoming barriers to technology use (Franklin et al., 2001).

Perspectives

Data analysis disclosed varying themes and perspectives from mentors and mentees related to the effects of this mentoring partnership. Mentors stressed the importance of engaging in meaningful application of their graduate course content whereas mentees focused more on the benefit of individualized support that was responsive to their contexts and needs as well as how this experience strengthened their professional goals. The next section discusses these mentor and mentee perspectives in more depth.

Mentor Perspectives

The mentors appreciated the opportunity to have an authentic experience while applying course learnings. These opportunities were recorded in the form of a reflective journal kept over the course of the semester. Through this partnership, mentors discovered the importance of presenting professional learning over time, application of andragogy, and the importance of listening when mentoring. When applying course content, the mentors stressed the importance of research. When their mentees had questions they could not answer or were unsure as to how to help, the mentors relied on information from research and/or experts in the field. One mentor

stated in the journal, “This experience has opened our eyes to the importance of taking a research-based approach, especially in such uncertain times.”

Flexibility and responsiveness were very important in the mentoring experience for mentors. The mentors realized that even though they might have had a plan for meeting with their mentee, new questions or situations they were not prepared to discuss could emerge. Therefore, the mentors learned to be responsive to the needs of the mentees through the sharing of research, resources, and online support. According to one of the mentor’s journal entries, “Teaching is an ever-changing field and, as a literacy specialist, we need to model how to adapt to those changes and support teachers in their efforts to best meet the needs of their students.”

The most important realization from mentors was the formation of relationships with their mentees. As one mentor stated in a journal entry, “Through this process, we created a relationship that was collegial and supportive, not evaluative.” The mentors achieved this by offering an outside perspective with fresh, unbiased eyes.

Mentee Perspectives

Mentees received support and help with creating professional goals. Similar to mentors who recognized the importance of flexibility, mentees felt the support they received from their mentors was responsive to their needs. One mentee shared on the survey that they "talked about situations and things that came up throughout the week and . . . brainstormed solutions" with their mentors. Content specific resources were an essential component of the online support that mentees received. On the survey one mentee shared the following about this specific support: “We talked about areas I was feeling like I needed help, and my mentors were quick to respond or follow up with emails including materials for me to use and look at.” Similar to the realization mentors had about the importance of relationships when mentoring, mentees appreciated the

opportunity to gain an outside perspective that was honest yet not evaluative. This mentee summed up this sentiment by stating on the survey, "I wanted someone outside of my school to check-in with and offer support and strategies."

One important result of the mentor-mentee relationship was the setting of professional goals. The mentoring experience fostered interest in continued learning for the mentees. Mentees expressed interest in attending graduate school and pursuing further professional learning. One mentee shared on the survey their desire to "spend more time reading professional articles about engagement and rich instruction in an online or hybrid learning environment." Finally, the ultimate goal of teaching is supporting the success and growth of students. Mentees found support for this goal in the form of a variety of online resources, strategies for positive reinforcement and classroom management, and an increased interest in ensuring that all students are working to the best of their abilities to achieve their goals. The mentees' perspectives reinforce Ingersoll and Strong's (2012) assertion that new teachers who participate in a mentoring program where they feel supported and valued are more likely to remain in their profession, bringing stability, continuity, and improved student outcomes.

Discussion and Implications

Exciting themes emerged from this mentoring experience which included, but were not limited to, collaboration, change, growth, building rapport, research, preparation, and active listening. The mentors realized the importance of professional learning and growth and how it felt to act as leaders/change agents in their buildings. Mentees benefited from their mentors' guidance while also understanding the importance of learning from others and building relationships both in and out of the actual workplace. One mentor summarized this relationship well in a journal entry by stating, "Our biggest accomplishment was building a good rapport with

the mentee in which she felt comfortable to ask us questions that she may not have felt comfortable to ask her teammates."

In order to bolster this experience, connections across multiple locations could be expanded in order to continue the ability to offer outside perspectives and honest feedback to mentees. E-mentoring, the process of using computer-mediated communication (CMC) technology as the primary means of communication between mentors and protégés, has become widely used and has changed the way we communicate (Janasz & Godshalk, 2013). Technology truly leads to flexibility and the ability to broaden a teachers' professional learning community beyond their buildings, their states, and even their countries.

Research suggests it takes three to seven years for a beginning teacher to become experienced enough to be considered highly qualified (Long, 2010) and more than one-third of teachers leave the profession within the first five years (Shaw & Newton, 2014), feeling misguided and not shown the right pathway to effective teaching. Therefore, mentor teachers who are knowledgeable and experienced, need to dedicate time to build a professional relationship with their mentees (new teachers) and help them adapt to the new school culture and environment. Mentors can provide suggestions for improvement for new teachers both in the areas of methodological and professional expertise. This helps in shaping values, beliefs and understanding and in the implementation of teaching skills for new teachers. Mentoring encompasses orientation, proper communication, instruction, support, constructive feedback, and guidance.

Addressing Teacher Shortage and Teacher Burnout

The larger implications of this experience for the education profession are important to consider. Teacher burnout and teacher shortage are major challenges both nationally and

internationally (Madigan & Kim, 2021). Recent research has shown that approximately half of new teachers leave the profession within their first five years (Madigan & Kim, 2021). High attrition for the least experienced teachers can be attributed to various factors, including "inadequate preparation, insufficient support, poor working conditions, and low salary" (Fuller, 2022, p. 10). High rates of attrition have both financial consequences as well as impacts on students' academic success (Madigan & Kim, 2021). Burnout can have physical and psychological effects on teachers as well as negative effects on job performance (Nápoles, 2022).

Teacher shortage is an issue for many states. For instance, in Pennsylvania, the state where this project occurred, currently the number of teachers on emergency permits is greater than newly certified teachers from PA teacher preparation programs (Fuller, 2022). Moreover, some communities are more deeply impacted by teacher shortage and high attrition rates. A lack of teacher preparation programs in rural areas increases the effects felt in rural schools (Fuller, 2022). Additionally, there is a severe shortage of teachers of color and there are higher rates of attrition for Black teachers, which in turn negatively influences the educational success of students of color (Fuller, 2022). Finally, challenges related to teacher staffing affect schools serving students living in poverty and students of color most drastically (Fuller, 2022). It is evident that the teacher shortage and teacher burnout have resulted in an equity issue that must be urgently and creatively addressed. It is more important than ever that all stakeholders begin to identify ways to reduce the high rates of teacher burnout and cultivate support and strategies for helping teachers remain in the profession. Remote mentoring such as the one presented here might prove to be a viable and cost effective way to support teachers to address some of these factors.

Responsive Mentoring in Authentic Contexts

Mentoring can take many forms and have different goals based on mentee-mentoring partnerships. Some mentees might want emotional support and a forum to discuss and process their experiences in a safe space. Other mentees might seek professional development and access to resources, materials and feedback to support their teaching. Lastly, some mentees might need to feel a sense of community and/or a role model to guide them on their journey. Informal, flexible mentoring partnerships like the one described in this experience allow mentees and mentors to provide the type and level of support that is responsive to the needs of those involved. Many schools/districts provide induction programs for new faculty, and while they can be very helpful, these programs are not designed to meet the unique needs of each new teacher and/or are not always implemented in a way that feels non-evaluative and safe for a novice teacher to honestly share their concerns and needs.

Mentoring and Considerations on Adult Learning

In the graduate course they took during this project, the mentors studied the assumptions about adult learning, specifically that adults are responsible for their own learning, adults have a large body of knowledge and experiences, and adults learn best from real life situations (Knowles, 1980). As a result, the mentors made extra efforts to respect the background knowledge of their mentees while expanding their new knowledge and supporting their needs. Because the mentoring was job-embedded and voluntary, the mentees were invested in the experience and were able to immediately apply what they learned to their teaching context. Mezirow's (2000) theory of transformational learning was also evident in this project. Transformational learning is an important educational model for personal change that affects not just what is learned, but most important, how people learn. The shift to online learning

necessitated this personal change and the additional mentoring support and respect for the tenets of adult learning made this transformation possible.

Limitations and Conclusions

Several potential limitations to this experience should be noted. First, the generalizability of the results might be limited due to the small sample size and the fact that all participants (mentors and mentees) were from the same institution. Replication with a larger pool of mentees and mentors across universities would help to increase generalizability of results. Additionally, recruitment of participants might be extended to just those who opt into participation to show if a mentoring partnership successfully supports participants who are not voluntarily seeking additional mentoring. Additional data collection instruments, such as pre and post surveys to determine the change in mentees' skill/comfort and mentors' application of content would provide valuable information as would a longer time period to collect this data. It should also be noted that the instructor of the graduate course is one of the researchers so some researcher bias might be present.

In conclusion, the pandemic necessitated many changes and novel approaches throughout the field of education. The remote mentoring partnership presented here, despite its inception in response to the pandemic, can be adopted as a possible future model of mentoring that provides integral support for new teachers and also serves as an authentic mentoring experience for graduate students. Given the dire outlook of those entering and remaining in the teaching profession (Sutcher et al., 2019), it is imperative that innovative options for sustaining teachers be explored.

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Institutional Evolvement Post Covid

Walter Jagela

One certainty in our modern, technological society is change. Change is something each of us either desires or fears. Some desire change for its forward outlook and, all too passionate thrust into new horizons of thinking and being. Others however, fear change because it may require them to move beyond their minimalist thinking, this is how we have always done it mentality, or take them out of their comfort zone where they have been residing for most of their lives.

In the higher education world, the environment in which we are currently experiencing is one of transition and change on various levels. The Covid Pandemic assisted higher education and education in general to change like no one's business. The environment went from everyday classes in a building with schedules to keep, bells ringing before, after and during school activities to virtual school which launched education into a transition. Change not only made its impact on education but the whole of society. Thus change, transition, and uncertainty have been our constant companions on the journey. Change will continue to be our companion on the journey thus thrusting us into more and more developments in education.

According to a study from Education Dynamics, *Marketing and Enrollment Management Benchmarks 2023*, forward-thinking colleges and universities are adapting to their new environments and rethinking their approach to everything from credentials to marketing and student engagement. The rethinking or reordering of the way education does its 'thing' in shaping minds and hearts must change the approach in order to engage present and new constituents in the business of education. This changing of approach will affect both education and how institutions market who they are and how their specific programs and areas of study will

impact the consumer. Modern students of today are coming from various backgrounds and socio-economics--- from first-generation college students to older adults looking to advance their careers or "fill the gap" in their own education. The change in approach, reshaping of the landscape at an institution, must be a permanent endeavor for education to succeed in the future. The Pandemic has taught us much even if we did not want to be taught. The education we have received during Pandemic, both literally education via on-line and figuratively through trial and error, has been a large part of the landscape for institutions to navigate. As I have stated to many, I have never navigated a pandemic, this is my first.

As education has been forced to change with the ebb and flow from Pandemic; the church as well has had to make adjustments to its past and current ways of "being". The same attributes attributed to education are the same terminology thrusted upon the church in these years, months and days beyond the height of pandemic. The church in modern day never had dealt with a pandemic and a shutting down of churches, employing social distance protocols, live-stream services either from our church buildings or someplace "safe" for the minister to preach to his/her congregations. Some hit the nail on the head; their approach was on point and adaptive to their new environment of virtual church. Others on the other hand, fell short of their approach to this new way of life and congregant gathering. Some welcomed the chance to impact their faith community, to keep in touch with them on various levels via Facebook, Facebook live, YouTube, TikTok, Snap Chat, and other means of fruitful communication. Some "hid away" and did not emerge until the pandemic was well under control. I wonder if their "hiding away" has caused many to not return to their house worship? I have heard the laity speak of "why return to something that did not feed me in the past, disappeared for several months to two years, and now wants me to return?" No judgement of either parties in this new way of life, however those who

saw the pandemic as an opportunity to minister in a different way pushed through the change and transitioned into more modalities that reached more people than their own congregants of their specific denomination. It would seem that those faith communities that embraced the unknown, the transition from traditional in-house worship to virtual worship, have seen that adaptation is the key to navigating the unknown, ever-changing landscape of faith. We make progress when we recognize that lifestyles have changed, flexibility must be the soil in which we plant, and choice is at the center of our interaction with one another (Jagela, 2023). Change, reshaping, reordering are no longer, in many faithful peoples' lives, seen as a threat to one's faith and or church experience but a necessary movement toward greater growth and an everchanging environment of church and congregation gathering.

Holy Father Francis has stated that we must reach people where they are and accompany them on the journey (Huebsch, 2017). If education can adapt and meet students where they are academically, socially and economically, then the church must do the same (Jagela, 2023). We as church must walk with another and see our differences as paths to success as individuals and a total people rather than threats to the common good. We saw the lifting of the requirement or obligation to attend Sunday Mass as a human precept which many dioceses then re-instituted after the pandemic was under control. Lifestyles have shifted and changed propelling us forward. Choice now has become ever so prevalent. Words like flexibility, adaptation, alternatives to worship are being utilized by a vast amount of the faithful. Are they wrong? Are they misled? Are they attempting to create their own style of church? Maybe and maybe not. It seems to this author, presider, pastor and one who comes from the pews to serve the pews that it is we who must recognize these individuals for who and what they are: people of God, faithful and

searching for more to concretely seal their faith in someone greater than themselves or an institution.

The higher education world, according to the study *Marketing and Enrollment Management Benchmarks 2023,* states that those schools which best understand today's modern student are best positioned to serve those students with flexible options that address their demands and preferences. These preferences and demands are not all that far off or unattainable. The study further suggests that some individual students have had to step away from higher education for a variety of personal, financial, health, or pandemic-driven reasons. Do we not experience this as well within the church environ? Many of the faithful have had to step away for the same reasons as stated above. This author believes this offers us as church and educational institutions the opportunity to assist many in overcoming these obstacles and re-enter a more vibrant experience of church and education. The schools and churches that best understand today's modern student, parishioner and or church-goer are best positioned to serve those constituents with flexibility. Flexibility will not totally address all the demands and changes but will move us to a better, more open-minded approach to faith and education in general unlike what we have lived, experienced and have always known. The schools that thrive and grow in a challenging environment will be those that best engage students and communicate their values with messages that resonate (Marketing & Enrollment Management Benchmarks, 2023). Could this also be said of the church and faith communities? Yes, those churches and faith communities that are thriving and growing are ones that identify with the faithful within and outside of the buildings. Those communities thrive because they are able to communicate values that resonate and identify with persons of all levels of faith development (Jagela, 2023). Maximizing and communicating clearly the values of an institution will seem to reap much benefit for all

involved. Balance is key especially in multi-faceted institutions such as education and faith communities. Building person-centric experiences and processes that will place individuals and communities first will emphasize to the broader community outside the institution, its focus and impact for years to come.

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