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ARTICLE

Education, Political Trust, and Perceptions of Distributive Justice - A Survey Study in China

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ABSTRACT

Using data from the General Social Survey of Wuhan, China in 2014, this study designs three paths to analyze the direct and indirect relationships between education and perception of distributive justice of income. The first path explores whether education directly affects people's perception of distributive justice. The second path connects education to socioeconomic status to determine whether higher status results in a higher perception of distributive justice. The last path introduces political trust as a mediating variable to evaluate the relationship between political trust and justice perception. Results show that education is the significant factor that affects people's political trust and perception of distributive justice.

1.Introduction

The perception of distributive justice, especially income and distributive justice, is a focus of scholarly inquiry. According to the development of human cognition (Heather & Tom, 1996),[5] too large an inequality of income distribution leads to strong dissatisfaction and social instability. According to this theory, the distributive justice of income distribution in China, which is experiencing a critical period of transition, requires special attention. From the era of planned economy, when income and fortune were distributed equally, to the opening time, when some people were allowed to earn much wealth, the people of China underwent the transition from the egalitarianism ("food prepared in a large canteen cauldron") to the widening gap in wealth distribution. Both the Gini coefficient and the Theil index show that the Chinese income gap already surpasses international warning lines. We direct our attention to series of destabilizing factors generated by the discontent of groups whose benefits have been damaged by the reform.

The Chinese people are aware of the inequality of income distribution. However the social mainstream holds that the existence of inequality is acceptable (Whyte, 2009).[28] Surprisingly, the lower the class a person belongs to, the more they believe that the income distribution (in China) is equal. Xie (2010)[29] explores this problem, and finds that perception of inequality of income depends on acceptance of the rule of social

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competition, in which most people firmly believe if they work hard, they can realize the goal of upward social mobility. Inequality of income allocation in China probably does not lead to strong dissatisfaction with the disadvantages of class and social instability (Whyte, 2009;[28] Xie, 2010).[29] By contrast, people who have more education express stronger perceptions that the income distribution is unfair (Whyte, 2009;[28] Li & Wu, 2012;[10] Meng, 2012). [19]

Literature on the relationship between education and the perception of distributive justice focuses on the following perspectives: theory of social structure status and relative deprivation theory (Xie, 2010; [29] Wang, 2010),[4] and the partial comparative perspective and expected income perspective (Ma & Liu, 2010;[18] Meng, 2012;[19] Xie, 2010).[29] The function of education is not only to provide income and social status (Liu, 2006; [14] Wang, 2010; [4] Xue & Gao, 2011; [31] Li & Wu, 2012),[10] but also to create variation in thinking and social perceptive ability (Whyte, 2009;[28] Li & Wu, 2012).[10] There are many paths through which education can influence the perception of fairness in the income distribution of people. However, few researchers have explored the cause-effect relationship between the highly educated people's political trust and the perception of fairness in income distribution. This paper uses education and political trust, especially procedural justice in the selection of party and government officials, into its analysis of the effect of education on the perception of fairness in income distribution. This is assessed in two tracks: the economic effect of education, which is represented by the social structure status model, and the non-economic effect of education, of the influence of education on political trust. Using the theory of group relative deprivation, this paper analyzes the relationship between education and perception of fairness in income distribution.

2. Literature Review and Hypothesis

2.1 Outcome Equality and Procedural Justice under Distributive Justice Theory

The perception of distributive justice actually is a subjective judgment of how to assign income (Li & Wu, 2012).[10] Distributive justice attracted the attention of scholars as early as the 1960s. Homans proposed a distributive justice theory in 1961, while Adams raised equity theory in 1965 (Karen & Karen, 1983).[9] Traditional distributive theory, which is based on the assumption that people expect to maximize personal interest in the social communication, holds that people prefer to follow the rule of personal interest center when they measure whether the outcome distribution is fair or not (Taylor & Moghaddam, 1987).[22] Therefore, at the time of making a judgment about the income equality and fairness of wealth distribution, people prefer to calculate their costs and benefits (Adams 1965; [1] Walsteret et al. 1973).[26] In this view, the personal perception of fairness depends on the comparison with surrounding people, and the judgment of fairness is made by comparing costs and benefits with others. Groups compared are thus local people who share the same socioeconomic status (Norma & Duane, 1986).[21]

The perception of distributive justice usually implies an outcome assignment of labor product. Several Chinese scholars have examined distributive procedural justice. Procedural justice theory regards regulation as important as procedure and as the standard for measuring whether the assignment is equitable. It emphasizes that procedural equality and outcome equality are independent. Different from single criteria of outcome equality judgment, many factors can impact people's measurement of procedural equality, including equality of treatment, the rectitude of the distributor, and whether individuals can express personal preferences when the procedure is performed (Ellen, Susan & Joseph, 2000).[3] When people are satisfied with outcome distribution, they do not explore procedure equality. Conversely, if outcome distribution does not meet the requirements of the people, procedural equality becomes critical.

2.2 Three Interpretations of Income and Wealth Distributive Justice Affected by Education

People's perception of income and wealth distribution is affected by education via three routes: direct effect, and the two indirect effects of economic effect through socioeconomic status, and noneconomic effect through influence of education on political trust.

2.2.1 Direct Effect of Education on Perception of Income and Wealth Distribution

The direct effect of education on the income and wealth distribution means that the influence comes from education itself. In China, people who have more education are more dissatisfied with the wealth distribution (Whyte, 2009;[28] Li & Wu, 2012).[10] Whyte (2009)[28] explains that although the principle factor in people's satisfaction is their own wealth, when people obtain more education, they engage in more critical thinking, which makes them aware of social prejudice and injustice. Li and Wu (2012)[10] find that more education means more knowledge accumulation

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and promotion of cognitive competence, along with the formation of critical analytical habits, which leads to learning more about the inequities of society. By contrast, individuals with lower levels of education are inclined to underestimate the level of inequality in society. Thus, the first hypothesis proposes that

Hypothesis 1: Education itself directly affects income and wealth inequality perceptions. When people obtain more education, they deem distribution more unfair.

2.2.2 Indirect Effect of Education and Economic Effect on Perception of Income and Wealth Distribution

The economic effect of education primarily manifests as education via advances in people's socioeconomic status and changes the perception of the wealth distribution. During the planned economy period, China implemented an even distribution policy. During the transformation period, rates of return to human capital were not decided totally by the market but by an array of social structural factors, such as industry and nature of unit (Liu, 2006).[14] In all departments, rates of return to human capital grew most rapidly in the public sector, the state-owned collective economy sector. Only the people with advanced education could gain a high rate of return to human capital. Though the rate of return to human capital deviates among sectors, the overall trend increases with schooling (Xue & Gao, 2012).[31] Personal income and occupational status create diversity in judgments of value and justice (Weng, 2010).[27] The more education people have, the more cultural and technological capital they have, and the greater the economic return they receive, an advantage of the new reforms (Liu, 2002).[15]

According to self-interest-centered theory, people at the social advantage level are apt to deem that the wealth distribution is impartial, and attempt to maintain the existing distribution system to maintain their superiority. Conversely, people from the bottom of the social structure, prefer to judge distribution system inequitable. When people's perception of wealth distributive justice polarizes on this issue, conflict between the advantaged social level and disadvantaged may occur (Cook and Hegtvedt, 1986;[2] Homans, 1961;[6] Kabanoff, 1991).[8]

Research shows that self-interest-centered theory applies equally to China. The more education people have, the more justice they will demand in the wealth distribution (Li & Wu, 2012;).[10] After learning more about social reality, the additional discontent will augment their perception of injustice (Li & Wu, 2012).[10] If considering a single factor, higher income promotes a higher perception of fairness of wealth distribution (Meng, 2012).[19] People equipped with knowledge expect more return from education. When comparing the disparity of costs and benefits, they may easily perceive that the wealth distribution is unjust (Meng, 2012).[19] Thus, the second hypothesis proposes that

Hypothesis 2: Education affects people's perception of income and wealth inequality by the way of the intervening variable of socioeconomic status. People who have more education are more inclined to regard the wealth distribution as unfair.

The noneconomic effect of education on the perception of income and wealth distribution focuses on a mediating variable, political trust. This paper uses procedural justice theory to explore the education-political trust relationship.

Political trust is people's faith and confidence in the output of the political system being consistent with expected results. When people think of relationship between perception of fairness and political trust, they would like to choose their own political discourse as the reference point, ignoring if their suggestions are adopted or not (Lind, Kanfer, & Earley, 1990;[11] Lind et al., 1993;[12] Tyler,1989;[23] Tyler and Lind, 1992).[24] Individuals concerning about procedural justice hope to acquire more information related to their own social status (Lind & Tyler, 1988;[13] Tyler, 1989;[23] Tyler & Lind, 1992).[24] People feel being respected and valued when they believe in procedural justice. If they lack this belief, they will feel their rights are infringed on and they are ostracized by the society (Tyler et al., 1994).[25]

In China, a country with a long history of authoritarian rule, public trust in the government depends not only on the performance of the government, but also on personal worship of authority (Ma, 2007).[17] That is why the public generally displays a high level of political trust in modern China. Social transformation has altered popular perceptions of political institutions. Citizens are given more trust to organizations and institutions than political actors (Meng, 2014)[20] The government, along with its agents - the officials who make policy, is responsible for public political trust. Inefficient government and high levels of corruption can result in low political trust (Zhang & Ma, 2015).[32] Research based on 19 years of datasets from China shows, compared to their high trust in governmental institutions, the public has low trust in civil servants, which may be the result of rampant corruption (Meng, 2014).[20] The market economy reforms opened new paths to corruption for power elites, who took advantage of their positions to seek benefits in order to maintain economic superiority (Liu, 2005).[16]

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Education level is another factor that can affect the public's political trust. Highly educated people suffer less under traditional political authority, and they are more likely to identify with modern democracy, and exhibit high political attention (Zhang & Ma, 2005).[32] Public servant corruption adds to their perception of the unjust distribution of wealth. Thus, greater education leads to lower political trust (Meng, 2014).[20] A Chinese saying observes that 'being an official is the natural outlet for good scholars', which implies educated people seek to become officials (Xie, 2010).[29] Thus, educated people, after gaining high income, turn to seeking political resources to expand their political influence (Huang, 2008).[7] This implies that procedural justice in selecting officials is an important reference for judgment of political justice. Public corruption and action of fighting corruption both alter their perception of distributive justice. Thus, the third hypothesis is:

Hypothesis 3: Education affects people's income and perceptions of wealth inequality through the intervening variable of political trust. Political trust varies with education - a higher level of education leads to a lower level of political trust and a higher level of perception of unfair wealth distribution.

3. Data and Variables

3.1 Data

Data comes from the General Social Survey of Wuhan, China in 2014. It involved a total of 13 districts, 32 sub-districts, and 63 neighborhood committees/village committees under the jurisdiction of Wuhan Municipality. A total of 1878 valid questionnaires (99.6%) were collected. As this paper mainly analyzes the direct and indirect effects of education on the above mentioned variables, a structural equation model is constructed using SPSS 17.0 and Amos 21.0.

3.2 Variables

3.2.1 Dependent Variable

The dependent variable is the perception of income, wealth, and distributive justice. In the questionnaire of the General Social Survey of Wuhan 2014, respondents were asked to evaluate the degree of equity of income and wealth distribution in China. The listed options are "very unjust", "a little unjust", "just", "very just", and "neutral". Answers are recorded as binary data. "Very just" and "just" are recoded "just", assigning 1, while "very unjust" and "a little unjust" are recorded "unjust", assigning 0. According to the field investigation, most "neutral" answers are "don't know". If a further answer is given, "a little unjust" is probably chosen. Thus, "neutral" is recorded "unjust", assigning 0.

3.2.2 Independent Variables

The core independent variable is education. Taking into account the requirements of the structural equation model for variables, the education level is operationalized as the number of years of schooling: no schooling = 0, primary school = 6, junior high school = 9, high school/secondary school/ vocational high school = 12, 2-year college degree = 15, 4-year university degree = 16, and graduate degree = 19.

The economic effect of education, which is represented by the socioeconomic status, is defined as income, occupation, and unit nature. Income means the 2013 annual income of a respondent, including the salary bonus, as well as various types of investment profits and dividends, including the implicit income of the respondents, which can well represent the overall income level of a respondent. The occupational stratum divides occupations into two major strata according to the classification of national occupational classifications and code lists. 1 = "senior management staff and senior technical staff", 0 = "other practitioners". In the nature of the unit, 1 = "Party and government organs, people's groups, and the army", 2 = "State-owned enterprises and state-owned holding companies," and 3 = "State-owned/ collective institutions," all are recoded as 1 = "State-owned enterprises and institutions." The remaining (including collective enterprises, private enterprises, foreign-funded enterprises, individual industrial and commercial households) is coded as 0 = "private enterprises."

The non-economic effects of education represent impact of education on political trust. Political trust is a very broad concept. It contains many levels, including both macro-organization trust and micro-individual trust. From the macroscopic to the microscopic level, political trust can be divided into three dimensions, including trust in the political system, trust in the political institution, and trust in government officials and civil servants (Xie, 2011).[30] Based on the design of questionnaire questions and the limitations of the topic of this study, this paper selects three variables: the fairness of party and government cadres selecting, the corruption phenomenon of government officials, and the effect of anti-corruption work. These variables represent institutional trust, government officials and civil servants trust, and political systems trust, respectively. Party and

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government cadres trust is itemized in the questionnaire by "What do you think is the fairness of the selection of party and government cadres in our country?" The options are divided into "very unfair", "not so fair", "fair", and "very fair", and "neutral". In the process of recoding, the three options of "very unfair", "not so fair", and "neutral" are treated as 0 = "unfair," while " fair" and "very fair" were recoded as 1= "fair." The issue of corruption among government officials is represented by the item "Do you think that the current corruption in our society is serious?" and the options are "very serious," "serious," "less serious," "no corruption," and "neutral". In the recoding, 0 = "very serious," " serious," and "neutral" were recoded as 0 ="serious", and "less serious", and "no corruption" as 1= "not serious". The item on the effectiveness of anti-corruption work is "Do you think that the current anti-corruption work of the party and the government is effective?" and the options are "very obvious", "pretty obvious," "obvious", "less obvious", "very inconspicuous", and "neutral". These are recoded as "very obvious", and "pretty obvious" = 1, while "obvious", "less obvious", "very inconspicuous", "neutral" = 0 " are "not obvious".

3.2.3 Analysis Path

This paper primarily examines how education affects people's perception of fairness of wealth and income distribution. The intermediary variables are socioeconomic status and political trust. Therefore, a structural equation model is used to design the three analysis paths. The first path analyzes the direct effect of education on the fairness of wealth and income distribution. The second path is education → socioeconomic status → wealth and income distribution fairness. The third path is education → political trust → wealth and income distribution equity. The hidden variable of socio-economic status is derived from three obvious variables: income, occupation, and the nature of the work unit. The hidden variable of political trust is represented by three variables: the perception of fairness of the selection of party and government cadres, the corruption of officials, and the effectiveness of party and government anti-corruption work. The proportion of missing values for all variables was below 2%, and missing values were replaced before inclusion in the structural equation model. The educational years and income variables are continuous variables, and other categorical variables are recoded as dummy variables to meet the basic requirements for a structural equation model. A preliminary analysis of the binary logistic regression model shows that demographic variables have a significant effect on the perception of fairness in the distribution of wealth, but only explain less than 2% of the variance. To make the analysis clearer, the basic demographic variables are not included in the structural equation model.

4. Data Analysis Results

4.1 Basic Descriptive Analysis of Variables

Table 1. Descriptive Analysis of Variables

Variables	Features
Core Dependent Variables	
Years of education	[0,19], Mean=10.84, SD=4.15
Indirect Effect - Economic Effect Independent Variables	
Income	[250, 2200000], Mean=39682
Profession	1= Managers and senior technical staff (18.2%), 0= Other practitioners (81.8%)
Nature of the work unit	1= State-owned enterprises and institutions (28.6%), 0= Private units (71.4%)
Indirect Effect - Political Trust Independent Variables	
The fairness of party and government cadre selection	Very unfair (14.8%), Not so fair (37.8%), Fair (28.7%), Very fair (2%), Neutral (16.7%)
The corruption of government officials	Very serious (39.5%), More serious (41.9%), Less serious (12.2%), No corruption (0.1%), Neutral (6.3%)
The effect of anti-corruption work	Very obvious (45 .1%), More obvious (17.7%), Less obvious (1.6%), Neutral (5.8%)
Independent Variables	
Perception of income and wealth distributive justice	Very unjust (18.8%), A little unjust (44.3%), Just (27%), Very just (1.9%), Neutral (8%)

As seen from Table 1, among occupational variables, the average years of education for Wuhan residents is 10.84 years, which is equivalent to the second grade of senior high school. The span of income is also relatively large. With clean data, the high-income earners are not excluded because as a provincial capital, people of both low- and high-income people are found, while the highest income is 2.2 million, which is not too large a singular value. Among the occupational variables, less than one-fifth (18.2%) of the people are engaged in management and high-tech work, a proportion that is larger (28.6%) in state-owned enterprises and public institutions. These are basically regarded as the middle and upper classes, while other practitioners occupy most of the medium and low-level occupations. The occupational structure can basically be described as a pyramid.

On the three variables of political trust (the fairness of party and government cadre selection, the corruption phenomenon of government officials, and the effect of anti-corruption work), more than half (52.6%) of the respondents believe that the selection of party and government cadres is unfair. 28.7% of the residents think that it is fairer and only 2% think it is very fair. In addition, 16.7% of people chose "Neutral". Through further communicating with respondents, we found that these individuals believe that the selection of party and government cadres were more prudent about politics. Therefore, when dealing with the variables, "neutral" is classified as "unfair." When asked about the problem of corruption in the society, 40% of people said that corruption phenomenon is very serious, and another 41.9% said it is more serious. On the whole, about 81.9% of people said that corruption is a serious problem in China, while 12.3% people said corruption was not a problem. Although corruption in China is regarded very serious, the party and the government's anti-corruption policies have also made people believe the country's determination and effectiveness in fighting corruption. Nearly half (45.1%) of the respondents said that the anti-corruption work is very effective, 17.7% said it is not so obvious and the government must continue to work hard. 7.4% of the respondents said that the anti-corruption work was not effective.

When asked whether the distribution of wealth and income of the entire society is fair, 18.8% respondents chose very unfair, 44.3% said it was not fair, and only 28.9% thought that was fair, and their pay out has a fair return.

Table 2. Cross-analysis of Education Variables[1] and Variables of Political Trust and Wealth Distribution

Education Degree	The fairness of party and government cadre selection		The corruption of government officials		The effect of anti-corruption work		Perception of income and wealth distributive justice	
	Very unfair	Unfair	Very serious	Less serious	Very obvious	More obvious	Very unjust	A little unjust
Primary school and below	12.7%	14.6%	13.4%	14.3%	18.3%	14%	11.6%	14.4%
Junior high school	27.9%	24.4%	31.6%	25.3%	34.8%	25.5%	26.4%	25.5%
Senior high school/ vocational high school	29%	29.7%	29.5%	29.3%	26.7%	30.8%	28.4%	31.4%
College and above	30.4%	31.3%	25.5%	31.1%	20.3%	29.7%	33.5%	28.7%
Total	100%							

Table 2 shows that the higher the educational level, the more unfair the perception of the wealth distribution, especially in the very unfair dimension. The same applies to the issue of fairness in the selection of party and government cadres. For education level of college and above, 30% have a perception of very unfair or unfair, and they are the highest among the four education levels. For the evaluation of corruption among government officials, the highest proportion of respondents who think it is very serious is junior high school graduates, accounting for 31.6%, followed by high school graduates accounting for 29.5%. The proportion of respondents who believe that corruption is less serious is positively correlated with the level of education level, with 31.1% from the education group of college and above. 30.8% of people who believe that the effect of governmental anti-corruption work is more obvious are senior high school graduates while college and above account for 29.7%.

1 According to the analysis needs, education variables are divided into four levels, they are primary school and below, junior high school, senior high school/ vocational high school, 2-year colleges and above, among which college and above includes 2-year college, 4-year college, and graduate students.

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4.2 Structural Equation Model of Education, Wealth, and Income Distribution Equity

Table 3. Correlation Analysis of Variables in Structural Equation Model

	Years of education	Income	Occupation	Nature of the unit	The fairness of party and government cadre selection	Perception of income and wealth distributive justice	The effect of anti-corruption work
Years of education	1						
Income	.170**	1					
Occupation	.211**	.116**	1				
Nature of the unit	.231**	.031	.252**	1			
The fairness of party and government cadre selection	-.123**	-.085**	-.026	.006	1		
Perception of income and wealth distributive justice	-.099**	-.050*	-.006	-.082**	.373**	1	
The effect of anti-corruption work	.055*	-.008	.000	.026	.105**	.086**	1
Corruption	-.132**	-.052*	-.005	-.024	.225**	.147**	.029

A double correlation analysis on all variables was done before structural model was constructed, which is showed in table 3. The results show that the number of years of education is significantly associated with all variables, except that the anti-corruption effect variable is slightly lower ($p<0.05$). The rest are all significantly correlated on the $p<0.01$ level. For the three variables of socio-economic status, income, occupation, and nature of the unit, all pairs are significantly related at the $p<0.01$ level except that the correlation between income and the nature of the work unit is not significant. The correlation between the three variables and the years of education is also significant. It is the same with the situation of political trust variables, except that the linear correlation between corruption and anti-corruption effects is somewhat weak.

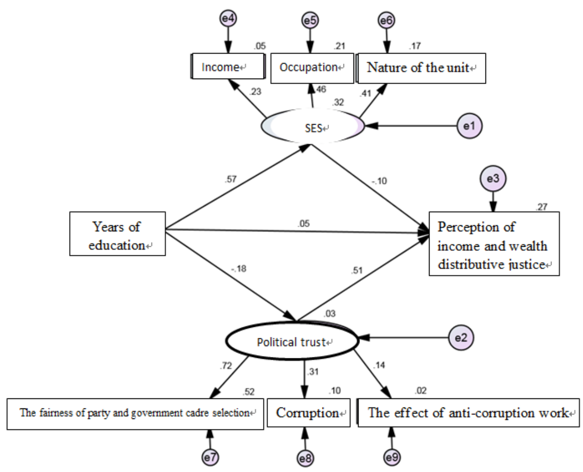

Figure1. Equity Structure Equation Model for Years of Education and Wealth Distribution

Table 4. Fitting Index of Structural Equation Model

Fitting Index	X2	df	X2/df	GFI	AGFI	NFI	RFI	IFI	TLI	CFI	RMSEA
Value	64.19	17	3.78	0.99	0.98	0.92	0.88	0.94	0.91	0.94	0.038

Table 4 shows that fitting index of the structural equation model is good. Although X2/df is only 3.78, $p<0.000$, and did not meet the model requirements, the indexes of GFI, AGFI, NFI, IFI, TLI, and CFI are all above 0.9, and RMSEA is also within the range of 0.3-0.8. Based on the above indexes, it can be concluded that the model has a good degree of goodness of fit and can be used as a structural equation model.

Figure 1 illustrates three paths of years of education and fairness of the perception of the distribution of wealth and income. The coefficients shown in the figure are normalized coefficients. The coefficient of regression of the years of education on the fairness of wealth and income distribution is only 0.05. The effect of years of education on socio-economic status is positively correlated, but socio-economic status has a negative influence on the perception of the fairness of the wealth distribution. The number of years of education was negatively correlated with political trust, while political trust was positively correlated with the perception of the fairness of the distribution of wealth.

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Table 5. Results of the Structural Equation Model Regression

Variables			Non-standardized coefficient	S.E.	C.R.	P
SES	<---	Years of Education	2091.145	344.786	6.065	***
Political trust	<---	Years of Education	-.003	.001	-3.654	***
Income	<---	SES	1.000			
Occupation	<---	SES	.000	.000	5.922	***
Nature of Unit	<---	SES	.000	.000	5.661	***
The effect of anti-corruption work	<---	Political Trust	1.000			
Corruption	<---	Political Trust	1.725	.404	4.267	***
The fairness of party and government cadre selection	<---	Political Trust	5.312	1.208	4.397	***
Perception of income and wealth distributive justice	<---	SES	.000	.000	-1.844	.065
Perception of income and wealth distributive justice	<---	Years of Education	.006	.004	1.333	.183
Perception of income and wealth distributive justice	<---	Political Trust	3.907	.877	4.456	***

The regression results of the structural equation model illustrate that the years of education has a significant determinant effect on socio-economic status and political trust, which are named implicit variables, but the cause and effect relationship between the years of education and the perception of fairness of wealth and income distribution is not demonstrated. Variables of income, occupation, and the nature of the work unit can represent the hidden variables of socioeconomic status. The effects of anti-corruption work, corruption, and selection of party and government cadres also reflect many hidden variables of political trust.

Figure 1 and Table 5 show that the first path of the structural equation model, the effect of years of education on the perception of fairness of the wealth distribution is not verified. Therefore, hypothesis 1 is not supported.

The second path of the structural equation model, the effect of years of education on the perception of fairness of the wealth distribution, is not verified. Therefore, hypothesis 1 is not supported. Educated people can obtain higher socioeconomic status. However, the higher socio-economic status does not mean that when people evaluate social fairness, they will use their self-interest as the judging criteria to maintain the existing wealth distribution system which is beneficial to themselves. Higher levels of education have enabled people to acquire knowledge and skills and break through the limits of their socio-economic status and be more critical (Whyte, 2009;[28] Li & Wu, 2012).[10] Thus, hypothesis 2 was not supported.

The third path, the effect of years of education on the perception of fairness in the wealth distribution ($p<0.001$) affects people's political trust. For each additional year of education, people's political trust fell by 0.18 units. The trust in politics also influences people's perception of fairness of the wealth distribution. The regression coefficient reached 0.51, which means that the higher the people's level of political trust, the more they agree with the existing system of social wealth distribution. The variable that contributes most to the political trust variable is the fairness of party and government cadre selection, with a regression coefficient of 0.72. This implies that the perception of the fairness of government agent selection procedures for civil servants has a great influence on people's level of political trust. This also implies that if people believe in the fairness of the selection process of cadres, they will believe that the government will create a fair social development order in which every person has the potential to achieve upward social mobility through their own efforts. Under this condition, even if there is a gradually widening gap between the rich and the poor, people regard it as fair (Xie, 2010).[29] Thus, hypothesis 3 is verified.

Table 6. Analysis of the Ways of Education and the Perception of Fairness of the Wealth Distribution

Independent variable	Causal effect	Path	Significant or not	Path effect value
Education	Direct effect	Education & perception of fairness of the wealth distribution	No	——
Education	Indirect effect	Education & perception of fairness of the wealth distribution	No	——
Education	Indirect effect	Education & perception of fairness of the wealth distribution	Yes	-0.18*0.51= -0.092

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Table 6 is the summary of the three paths of the structural equation model. The direct impact of education on the perception of fairness of the wealth distribution is not significant. Therefore, the improvement of education level does not improve people's evaluation of perception of fairness of the wealth distribution. The indirect effect of education on the perception of the fairness of the wealth distribution through the intermediary variables of socio-economic status is not supported. Only through the promotion of people's political trust does education have an indirect effect on improving people's perception of the fairness of the wealth distribution, and the path coefficient is −0.092. That means for each additional year of schooling, the perception of the fairness of the wealth distribution is reduced 0.092 units.

The widening of the gap between the rich and the poor in China and the appearance of the Matthew effect of wealth accumulation have all aroused scholarly interest in the public's perception of the fairness of the wealth distribution. Whether the distribution of wealth is equal is a subjective judgment which plays a decisive role in social stability (Li & Wu, 2012).[10] The previous experience of social development has led to the formation of a psychological presupposition that people living in the lower classes are more likely dissatisfied with the existing institution of wealth distribution, while the classes that enjoy the benefits of the existing distribution institution support the existing distribution rules. This survey study has reached the exact opposite conclusion. Even though the gap between the rich and the poor after the reform and opening up has widened and the Gini coefficient exceeds the international warning line, the middle and lower classes do not have much disagreement with the existing distribution institution. The negative evaluation of fairness of the wealth distribution comes largely from people who are well educated and living in abundance.

5. Conclusion

Using data from the General Social Survey of Wuhan in 2014, this study designed three paths to analyze the direct and indirect effects of education on perception of distributive justice of income. The indirect effects of education are divided into economic effects and non-economic effects. The economic effects of education are manifested in the mediators of socioeconomic status, while the non-economic effects focus on the impact of education on people's political trust.

The structural equation model shows that people with more education are more likely to achieve higher socioeconomic status, but higher socioeconomic status does not result in a fairer or more unfair perception of the existing distribution institutions. Therefore, the way in which education influences the perception of fairness of the wealth distribution through the intermediary variables of socio-economic status is not supported. The results of previous studies show that the people's acceptance of the existing distribution institutions is built on their belief that they could move into a higher social class as long as they make the effort. The third route analysis, which examines the role of education in the perception of the fairness of the wealth distribution, with political trust as the intermediary variable, found that the higher the level of education, the lower the level of political trust, and the lower the trust in the fairness of party and government cadre selection. People's trust in party and government cadres, who are government agents, directly affects their perception of the fairness of the wealth distribution.

It is likely that highly educated people have a deeper understanding of the current social situation and find it easier to perceive its shortcomings and defects. Although the returns given by society to highly educated persons enable them to enjoy economic advantages, they are more eloquent in expressing their dissatisfaction with the social order and promoting the process of social justice. In countries where people have high political expectations and reliance, the level of the fairness of party and government cadre selection and political trust influences people's perception of the fairness of the wealth distribution. Because of Chinese cultural traditions, ancient intellectuals are concerned about the destiny of the country and the people, and a good scholar will likely become an official. Therefore, highly-educated intellectuals in modern China have expressed more concern about political fairness and have expected more will be done about it. Only when the procedures for selecting a political party and government officials are perceived as fair, can the government win more political trust. Only when the political institutions are uncorrupted, can people believe working hard will lead to a better future.

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ARTICLE

Investigating Learner Engagement in Flipped English as a Foreign Language Classroom

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ABSTRACT

Flipped classroom is an innovative instructional method. Recent technological developments have given rise to the popularity of flipped classroom. This study reports the findings of a questionnaire survey that investigates learners' perceptions of flipped EFL (English as a Foreign Language) classroom, with a particular focus on their self-perceived learner engagement. The results of the study indicate that the learners generally have positive and favorable attitudes toward flipped classroom. Seventy-five percent of them consider flipped classroom useful in boosting their confidence in learning English and 50.6% think that they have become more interested in the course. Yet, it is also found that only 30.1% agree that flipped method has helped them to understand the course content more clearly. In addition, as high as 71.6% of the respondents agree that the flipped method can increase their motivation to participate in classroom learning activities, but only 44.9% believe that their engagement has been raised. While the results show that the students tend to accept this new teaching method, their evaluation of the actual effects of it is not as expected, which may be due to the lack of guidance and the weak connection between online self-study and classroom activities. Future studies are needed to explore how to strengthen these areas.

1. Introduction

For decades, researchers have been trying to introduce new technology into college EFL classrooms. Such attempts have been particularly obvious in the last two decades. The schools go to great lengths to buy cutting-edge facilities, in the belief that modern teaching equipment would naturally result in modern teaching means, which would naturally lead to improved teaching effectiveness. Yet, this is not always the case. One cannot rely on technology alone to improve teaching effectiveness, instead, educators should also consider other aspects of teaching, learner characteristics, teaching plan, teaching content, learning environment, learners' prior learning experiences, and their familiarity with technology. The same is true for the flipped method, in which the traditional instructional sequence is revered (Egbert, et al., 2018).[5]

As a relatively new form of blended teaching, flipped classroom is gaining momentum as an innovative instructional method. The flipped method aims at

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combining traditional classroom teaching and online learning and making the best use of both instructional modalities. While there exist abundant studies showing the effect of this method in engaging learners and promoting student-centered learning, research efforts are needed to examine if this method works for all types of learners, how they perceive the effectiveness of flipped learning, and what parts of the flipped method work, and not work.

2. Literature Review

Constructivist learning theory is the theoretical basis of flipped classroom method. Constructivists hold that knowledge is individually and socially constructed, and the learning environment should encourage active, reflective, contextualized, and cooperative learning, and the use of authentic tasks. In constructivist learning environments, students are often divided into small groups, which promotes active dialogue, interaction, team work, knowledge construction and problem solving. Teachers play the role of a consultant, a facilitator, providing guidance and support to learner's knowledge construction process (Khalil & Fahim 2017).[12]

Flipped classroom, enabled by digital technology, comes with several instructional benefits. Learning goes beyond the brick-and-mortar environment, and learners can learn anytime, anywhere, and at their own pace. Classroom is no longer the only place where teachers and students can interact. The abundant digital communication tools and platforms (e.g., WeChat, DingTalk) allow students and teachers get connected and interact anytime, anywhere. Because of the increased interaction, teachers have a better chance of identifying the problems, struggles students have, individually or collectively. Teaching and learning become far more flexible than before.

The flexibility of flipped method demands higher on learners in terms of time management, self-discipline, learning ability, and metacognitive skills. More freedom comes with more responsibilities. With the increase of learner autonomy in the flipped method, students undertake the task of constructing knowledge rather than passively receiving the knowledge lectured by a teacher in classroom. This self-study session is usually done by watching video lectures in online learning system.

Learner engagement plays a critical role in the knowledge construction process. Engagement refers to students' active participation and involvement in classroom activities and learning process. It plays a vital role in the process of foreign language learning. Learning a new language requires a significant amount of passion, efforts, practices, and reflection. Learners need to actively interact with peers, practice using the target language, not be afraid of making mistakes, and constantly reflect upon and analyze their own learning process and learning outcomes. All of these demands high level of learning engagement (Wang et al., 2014).[14]

While there exist abundant studies on the use of technology in teaching, most of which focus on the comparison between new technology and traditional or innovative teaching methods (e.g., Hung, 2015),[9] how technology is used in teaching (e.g., Blyth, 2018),[3] or learners' attitudes towards teaching innovation (e.g., Farrah & Qawasmeh, 2018).[7] Relatively less studies have examined how learner engagement is enhanced in technology-enhanced flipped learning environments. According to technological determinism, the use of technology alone is able to enhance or change teaching and learning effectiveness. Yet, empirical studies have revealed that this is not true universally; many attempts of introducing a new technology have ended in no significant effect (Kirkwood, 2009).[11] In fact, technology cannot take the role of teachers. The flipped instruction is often assumed to be able to increase learner engagement and generate a high level of participation from students. Again, this is yet to be determined.

3. Research Design

3.1 Flipped Course Design

The present study was designed to determine whether the flipped classroom design could help to improve learner engagement. The course that was studied was Comprehensive English, which was taken by first-year and second-year non-English major in the university the researcher is employed. In order to help students better understand the meaning of and the way flipped classroom works, teachers of all classes spent a session in introducing this new teaching method, including the number and deadlines of term projects, the arrangements of quizzes, grading criteria, and the relationship between online learning and in-class meetings. It is expected that this orientation session helps minimize students' resistance to flipped classroom through a better understanding of this innovative instructional method and the autonomy and responsibility of learners in this learning environment.

The online learning system was designed by the colleagues of the researcher, including structure, selection and arrangement of learning materials, homework, and learning assessment. The school hired a company to build the platform following the teaching team's requirements. Only rigorously selected teaching and learning materials were used for the self-study. They include texts, pictures, audios and videos. "Students prefer a teacher explanation

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than a peer explanation and there were concerns over the 'trustworthiness' of a peer-produced video tutorial" (Engin, 2014: 12). [6] Most students seem to naturally trust teachers and their instruction.

Students are required to complete all reading, watching, and online exercises before the class meeting. To ensure the effectiveness of the self-regulated online learning, the course uses the pass-advance method that allows students move to the next section if they finish the previous section with a minimum of 80% accuracy on the quiz responses. To promote peer-to-peer interaction, teamwork is required in each unit requiring students to work in small groups and participate in online discussion on the e-learning platform or in their WeChat groups. Teachers also participate in the online portion through Q&A sessions, monitoring group work, and providing feedback on learning progress. The online learning is followed by class meeting, in which students meet, discuss, and share their learning through a variety of student-centered learning activities.

3.2 Survey Questionnaire

The survey was conducted by inviting all students who were taking the course to fill out an anonymous questionnaire. The questionnaire, designed by the researcher, was distributed at the end of the semester. There were eight questions that asked about students' perceptions of the flipped EFL classroom, ranked on a 5-point Likert-type scale. A total of 217 questionnaires were sent out, 196 responses were received, and 176 valid responses were included in the data analysis.

The survey questions centered around how flipped classroom affected learning attitude and whether it could improve learner engagement. The questions were: 1) Do you agree that flipped classroom could help to boost your confidence in learning this course? 2) Do you agree that flipped classroom could help you to understand the course content more clearly? 3) Do you agree that flipped classroom allowed you to perform better in classroom activities? 4) Do you agree that flipped classroom has deepened and extended your learning of the course? 5) Do you agree that it was more convenient to practice newly-learned language points in flipped classroom? 6) Do you agree that you became more interested in this course after adopting the flipped classroom mode? 7) Do you agree that flipped classroom increased your motivation to participate in classroom activities? 8) Do you agree that flipped classroom was very useful and you are willing to continue using this teaching mode? In addition, if students had any comments or suggestions about this course, they could share in a textbox at the end of the questionnaire.

4. Results and Discussion

4.1 Results of the Questionnaire Survey

The valid responses were graded by the researcher. Every question item was followed by five options, ranging from "Strongly disagree" to "Strongly agree" with values 1-5 assigned to each of them, respectively: "Strongly disagree" (1 point), "Disagree" (2 points), "Undecided" (3 points), "Agree" (4 points), "Strongly agree" (5 points).

Cronbach's alpha was used to evaluate the internal consistency of the scale. The total Cronbach's alpha coefficient for the survey questions was 0.78, indicating good reliability overall. Content validity was confirmed by examining the matching degree between the survey questions and the survey goal. The survey questions can measure the respondents' attitudes towards the flipped classroom approach from different angles, with a focus on its impact on learner engagement.

Table 1. Results of a Questionnaire-based Inquiry on Students' Perceptions of Flipped Classroom

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Mean
Q1	10(5.68%)	19(10.79%)	15(8.52%)	70(39.77%)	62(35.22%)	3.88
Q2	53(30.11%)	50(28.40%)	20(11.36%)	31(17.61%)	22(12.50%)	2.54
Q3	38(21.59%)	59(33.52%)	31(17.61%)	27(15.34%)	21(11.93%)	2.62
Q4	14(7.95%)	26(14.77%)	15(8.52%)	61(34.65%)	60(34.09%)	3.72
Q5	16(9.09%)	31(17.61%)	31(17.61%)	64(36.36%)	34(19.31%)	3.39
Q6	27(15.34%)	36(20.45%)	24(13.63%)	43(24.43%)	46(26.13%)	3.26
Q7	12(6.81%)	21(11.93%)	17(9.65%)	68(38.63%)	58(32.95%)	3.79
Q8	12(6.81%)	15(8.52%)	20(11.36%)	73(41.47%)	56(31.81%)	3.83

As shown in Table 1, **question one on confidence** got a high mean of 3.88. In face-to-face teaching, students usually have little time allowed to think because, in most cases, teachers are engaged in their lecturing, following their PowerPoints, reading from their scripts, thus leaving students no time to question or reflect what they are listening to. This drawback can be effectively avoided in the flipped classroom method. When studying online, students can press the pause key whenever they need to, allowing them adequate time to think and reflect on the learning materials. In addition, they also have time to prepare and refine their answers, without the heightened anxiety of being called on by professors randomly. All these changes provide them with more confidence in learning English.

Unlike question one, **question two on grasp of learning materials** got a low mean of 2.54, which is

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unexpected. When using the flipped classroom method, students have control of their own learning; the learning materials are also abundant in quantity and media types. Such design is meant to assist students to better understand the course content. However, more than half of them did not think this was helpful. An analysis of students' comments has identified three key reasons. (1) There is a lack of teacher's guidance in the learning process. Flipped classroom method demands high on learner's self-discipline, learning ability, and time management skill. Not all learners survive and thrive in this learning environment. (2) The task descriptions and assessment criteria are sometimes not clear, which might be frustrating for learners if they are not able to get immediate help. (3) Lastly, many students need to adjust to the flipped classroom method. As respondents of the survey shared, the classroom atmosphere seems "too relaxing" and unorganized to them. As a relatively new teaching method, it may take quite a while for both students and teachers to get used to the flipped classroom learning method and environment.

Question three on classroom performance also got a low mean, 2.62. Such a low mean indicates that they did not believe this teaching mode had helped them to perform better in classroom activities. Some students pointed out that online learning and classroom activities were only weakly connected and they also felt a lack of guidance when studying online. Such complaints were not unpredictable. In traditional classroom teaching, the most common practice includes transmitting target knowledge, doing exercises on the key expected competencies and organizing relevant task activities, all of which are clearly connected and targeted. In flipped classroom, however, students are expected to learn, all by themselves, new contents on the e-learning platform prior to attending class. In addition, the time elapsed between online learning and in class meeting may not help with the timely learning reinforcement, especially in the context of a second language learning. As some studies have revealed, the success of blended learning cannot be achieved without appropriately arranging online learning and classroom teaching (e.g., Ginns & Ellis, 2007)[8].

A high mean was reported for **question four on deepened and extended learning** (M=3.72). The respondents agreed that they had benefited from the flipped EFL learning environment. For instance, mobile technology makes it very easy for students to obtain an infinite amount of information. For these EFL learners, learning English goes beyond reading and reciting textbooks. Students can learn from watching English movies, TV shows, listening to podcasts, music, and joining in social media programs. English language learning becomes more fun, engaging, and effective.

The mean for **question five on flexibility of learning** was high (M=3.39). The online learning platform provides a learning environment where students can learn on their own, at their own pace, without the anxiety of being called on in the classroom. Many students indicated that they enjoyed the freedom, relaxation, and autonomy of online learning. In addition, when learning online, learners have more time to think and more opportunities to explore relevant learning materials, both of which help enhance the depth of learning and retention of learning.

Question six on interest in learning English got a high mean of 3.26. The flexibility of online learning also helps improve students' interest in learning English. As some respondents stated, the classroom meeting in the flipped classroom is no longer limited to reading and analyzing textbooks; instead, they can participate in sharing, discussing their homework, along with some fun activities. Some other students said they had always been interested in learning English so whether the class was flipped or not did not affect their interest in the course. There were also a few respondents who showed resistance to this flipped teaching method. For instance, some of them stated that they would have understood better and more quickly if teacher's explanations were available. It took them a lot of effort and time to understand the learning materials well.

A high mean was reported for **question seven on motivation for participation** (M=3.79). EFL teachers in the researcher's workplace have long been trying to create a learning environment where students have more opportunities to participate in interactive activities. But due to the common practice of lecturing, the dominant teaching method in the traditional classroom, student's participation of classroom activities is limited. Participants of the flipped classroom stated that the classroom meetings provide more participation opportunities because lecturing was no longer part of it. In addition, the tasks and activities of each class meeting are pre-scheduled, which students can prepare for. This is very different from the traditional classroom teaching, in which students are often called on off guard (Abdullah & Al-Mofti, 2017).[1]

The mean score of **question eight on the usefulness of flipped method** was as high as 3.83, suggesting that respondents were in favor of flipped EFL classroom and seemed happy to accept the use of flipped method in English learning. This makes great sense when considering other questions with high means, such as confidence, interest, motivation, and deepened and extended learning. While the flipped method does not work for all students,

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the majority of the students responded to the survey expressed they would like to continue their participation in flipped classroom learning of English.

As for the comment section, which was optional in the questionnaire, 41 respondents provided comments and/or suggestions, most of which focused on the instantaneity of communication and interaction. Eight of them wrote that it often took hours, even a day or more than one day, to receive a reply from peers or instructors on discussion board platform or WeChat group. In addition, there was very little online synchronous communication with instructors, who were usually unable to provide timely feedback. What's more, a great majority of the online exercises were graded instantly by computer, with no detailed feedback. Such learning assessments do not help learning and growing in a meaningful way. This disadvantage was also pointed out by the students, who said that the lack of teacher's guidance in the self-study process sometimes made them feel confused, frustrated, and defeated.

4.2 Discussion of the Findings

One of the most prominent advantages of flipped classroom is its expansion of learning time and space. Students log on to the platform wherever and whenever there is Wi-Fi. In this study, students did log on at different times of the day, ranging from early morning to late evening. But it was impossible for teachers to sit in front of the computer and monitor their learning or offer immediate feedback from dawn to dusk, which resulted in a serious lack of communication and connection between teachers and students. As a result, online learners may feel a sense of separation, isolation, frustration, which results in lower level of motivation and engagement in online learning.

Some students complained that, despite the shorter classroom time, the participation of a flipped classroom seemed to be more tiring. This makes sense because passively listening to teachers' lecturing does not require lots of effort on learners' end. In a flipped classroom in which lecturing is eliminated or minimized, students need to actively or are forced to actively participate in classroom activities. Teachers play the role of moderator, coach, and evaluator. In spite of the complaints, students affirmed the positive role of flipped method in encouraging active participation, collaboration in the course - a finding that is also found in other studies (Burke & Fedorek, 2017).[4]

Findings from questions three and seven merit attention. It is quite interesting and surprising that 71.22% of the respondents thought flipped classroom motivated them more to participate in classroom activities, while only 27.27% believed it did help them better participate. In other words, quite a few students thought they were more motivated to participate in classroom activities, but the increased motivation did not result in better performances. This could be partially explained by some of students' comments, including the weak and vague connection between online learning and classroom activities and the lack of teacher's guidance.

The findings also suggest that technology integration is not simply using various technical means. The true integration requires teachers and students to cooperate and figure out how to use technology in teaching most efficiently. Based on the analysis of flipped EFL classroom, the study described one way of using technology in EFL teaching and examined whether this teaching mode could help to improve learner engagement through a questionnaire survey. The analysis of the results showed that it did have some positive effect on the improvement of learner engagement and the enhancement of cooperative learning. At the same time, the analysis also found some problems, such as the lack of teacher's guidance in the online learning part, and the weak connection between online and offline learning.

Modern technology has many practical functions that can benefit education, such as "individualized interfaces, real-time access to information, context sensitivity, instant communication and feedback" (Papadakis, 2018: 348).[13] Yet, no matter which teaching mode is adopted, flipped or not, no matter how advanced the technological means is, the ultimate goal is to improve teaching effects. To achieve this goal, increasing learner engagement is a crucial step. The findings from this survey study suggest that teachers must attach importance to the connection between student's online learning and face-to-face classroom meeting. Otherwise, the classroom teaching would feel disjointed. As shown in the questionnaire, despite the fact that the majority of students had completed the online learning before the class session, many of them still found it difficult to actively participate in classroom activities. Without teacher's guidance and appropriate teaching methods, flipped classroom may not lead to desired learning outcomes. Therefore, instead of assuming that students are capable of handling online learning and perform well in both online and offline contexts, teachers should take various factors into consideration when adopting flipped instruction, including "student characteristics," the learning materials students are expected to learn by themselves, and the connection between online and in-class tasks (Kalogiannakis & Papadakis, 2019: 117)[11].

5. Conclusion

This study looked into a group of EFL students' perception of flipped classroom method. The results show that this innovative instructional method can enhance students' confidence, interest and motivation in learning English. This finding is consistent with several other studies (e.g., Wichadee, 2017).[15] For example, Blair et al. (2016)[2] found that the use of flipped classroom failed to significantly improve students' grades as expected. In this way, it seems that, in spite of students' stronger confidence in learning the course and greater motivation to participate in classroom activities, the increase of learner engagement is not assured. To a large extent, it still depends on the teacher whether flipped classroom can generate the desired teaching effects. After all, it is the teacher who designs and carries out the teaching task. Therefore, when using the flipped teaching mode, teachers are supposed to skillfully design in-class activities during class meetings in order to use class time effectively.

As for the class meetings, here are some suggestions for those who have an interest in trying this flipped methodology. In order to connect the online and offline learning, the teacher can begin each class meeting with a brief review of the online learning part, including content and key language points. Special attention should be given to misconceptions, misunderstanding that students have formed in the online learning session. Learner-centered tasks and activities should be planned to create interactive discussions among students. It works best when a class meeting ends with the teacher's summary of course content and comments on students' class performances.

The findings of the study also indicate that teacher training in flipped method is much needed - this is critical to the success of a flipped classroom course. Given the novelty of the flipped method, many teachers may not be familiar with this pedagogical method. It is imperative for teachers who are interested in using the flipped classroom to get training, including the instructional benefits, theoretical basis, and the best practices.

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ARTICLE

The Role of Spirituality in Cultural Adjustment of Asian International Students

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ABSTRACT

Many Asian international students face adjustment challenges as they live and study in the United States (US). While it is largely unrecognized in the West, collectivist spirituality is an essential part of Asian cultures and functions as a potent source of resilience. This article, therefore, explores spirituality and describes how it functions as a coping mechanism for Asian international during their cross-cultural adjustment. Additionally, implications are made for university-based counselors, educators, and administrators to better support this student population.

1. Introduction

American higher education institutions are educating an increasing number of international students, and a large percentage of them are from Asia. While transitioning to new educational settings in the unfamiliar culture, Asian international students often face a unique set of challenges originating from an imbalance between cultural demands and available resources (Ma, Pitner, Sakamoto, & Park, 2020).[25] For one, having come from relatively homogeneous countries (compared to the US), they may migrate to the US with a weak sense of cultural identity. Adjusting to the new culture requires/demands that they reconstruct their sense of self in relation to others within the new environment (Hsieh, 2006;[12] Kim, 2012).[17] This process of cross-cultural adjustment is likely to cause psychological difficulties that may have a long-lasting impact on the mental health of these students (Li & Lin, 2014).[23]

Studies have reported that some Asian international students use spirituality to reduce the deleterious effects of adjustment strains (Chai, 2009;[4] Philip, Neuer-Colburn, Underwood, & Bayne, 2019;[37] Potkar, 2013;[38] Sato & Hodge, 2009).[40] Although spiritual practices may vary in forms among individual students, for these students, spirituality gives meaning to their daily lives, helps integrate different layers of their identity, and provides a source of social support through acceptance and approval.

What is spirituality? While there exist many definitions of this term, spirituality is perhaps best understood as a search for meaning and purpose in life through a greater self-understanding in either a religious or nonreligious context (Hill et al., 2000;[10] Miller & Thoresen, 2003).[31] Spirituality provides a means to understand the various

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aspects of life and unify one's identities both within the self and within a larger society (Pecchenino, 2009).[36] Also, spirituality recognizes the complexity of life, sees struggles as developmental opportunities, and promotes a sense of connectedness among people (Ashmos & Duchon, 2000;[2] Potkar, 2013).[38]

What characterizes Asian spirituality? In contrast to Western cultures that value competition, independence, and autonomy, Eastern collectivist cultures feature relational harmony, interdependence, and connectedness (Triandis, 1995).[43] Generally speaking, members in collectivist cultures tend to identify themselves as part of a larger whole while also maintaining strong emotional attachments to their small, selective in-groups. Preserving in-group harmony is a means of fulfilling social and familial roles. Goals are communal, and achievements are attributed to collective effort. Collectivist cultures are commonly observed in Asia, Africa, and Latin America (Triandis, 1995).[43]

In the context of a new language and culture, spirituality plays a critical role in supporting Asian international students in facing, understanding, adjusting, adapting, and enjoying new learning, living, and social environments. As Canda and Furman (2010)[3] claim, spirituality is essentially a cultural diversity issue. The spiritual experiences, behaviors, and beliefs of Asian international students are diverse, but the core values of Asian spirituality are similar among collectivist cultures. Asian students with strong spiritual beliefs are less likely to take a fatalistic approach to their problems. In fact, they may be compelled to look inward, reflect on their personal and cultural values, and seek purpose and strength to move forward. In this process, spirituality as meaning-making enables them to reframe their situations from more positive perspectives. For many, it may help restore healthy self-relationships and create novel interpersonal connections as a powerful source of support and validation.

Despite its relevance, Asian students' spirituality has been largely overlooked in U.S. higher education institutions. Addressing the needs of this group of learners and including them in university services would foster an environment of greater social justice, a core commitment of higher education. And, understanding the characteristics of Asian spirituality would enable faculty and staff in higher education to respectfully interact with Asian international students and to effectively help them build personal strengths based on their core values (Hanna & Green, 2004).[9]

This article aims to explore how spirituality can function as a coping mechanism for Asian international students from collectivist cultures during their studies in the US. The author is aware of the idiosyncrasies existing within Asian cultures, including different spiritual practices. The scope of this article is confined to overall tendencies and characteristics shared among Asian international students from collectivist cultures. This broad scope may run a risk of oversimplifying the complexity of certain cultures or spiritual beliefs, but it is useful to explain the general acculturation experiences of these students in order to establish baseline clinical practices that are informed by spirituality.

2. Transitions to a New University: Challenges and Opportunities

For several decades, keeping abreast with fast-paced international developments, many U.S. universities have made systematic efforts to increase campus globalization. During the 1990-1991 academic year, 407,529 international students enrolled in U.S. universities. This number reached 1,095,299 during the 2018-2019 academic year, and international students contributed close to 45 billion dollars to the U.S. economy in 2018. The top three countries that sent the largest numbers were China, India, and South Korea, making up more than half the international student population (Institute of International Education, 2019).[15] The integration of students with diverse cultural experiences and perspectives enriches both university prestige and community. International students have also been instrumental in enhancing diversity and cultural awareness in the U.S. higher education.

While transitioning into the new environment, many Asian international students cope with challenges by using familiar cultural assets from their own heritage (Hsieh, 2006;[12] Kim, 2012;[17] Philip, Neuer-Colburn, Underwood, & Bayne, 2019;[37] Potkar, 2013)[38] and engaging in collective efforts through shared experiences that may attenuate the impact of individualism (Hyun, Quinn, Madon, & Lustig, 2007).[14] This tendency becomes complex when cultural values of the host nation are in conflict with those of international students. Thus, many Asian international students experience adjustment challenges that often cause acculturation stress.

Major stressors for Asian international students include the language barrier, strenuous academics, financial constraints, homesickness, discrimination, immigration requirements, and social isolation (Ang & Liamputtong, 2008;[1] Ma, Pitner, Sakamoto, & Park, 2020;[25] Wei et al., 2007).[45] Although some may argue that these challenges are universal to all international students, students from collectivist Asian cultures who live in the US have reportedly experienced the highest level of adjustment difficulties due to salient cultural differences (Hsieh, 2006).[12] Asian international students shoulder additional stressors that derive from their cultures, such as family recognition through academic success, an emphasis on emotional suppression, and a greater stigma toward mental illness (Hyun, Quinn, Madon, & Lustig, 2007;[14] Wei et al., 2007).[45]

The aforementioned collectivist cultural stressors can compromise mental well-being as Asian international students pursue their academic goals. For example, Asian international students desire academic success based on their cultural expectations (Ma, Pitner, Sakamoto, & Park, 2020).[25] Many base their self-worth on academic success and find it difficult to cope with the idea of failing. This expectation involves more than just personal pride; it is a way of bringing honor to their families and fulfilling their roles (Li & Lin, 2014).[23] Asian cultures are interdependence-oriented and the ability to suppress emotions, particularly negative ones, is important to maintain in-group harmony (Markus & Kitayama, 1991).[26] Furthermore, Asian international students may perceive it as culturally inappropriate to speak of personal problems outside of their primary support groups (Ang & Liamputtong, 2008);[1] sharing with outsiders may be perceived as a slight against the cultural code of interdependence among in-group members and thus evoke feelings of guilt and shame. As a result, many Asian international students are unwilling to seek outside help, which could increase levels of stress (Ma, Pitner, Sakamoto, & Park, 2020).[25]

As mentioned in the Introduction section, some research studies have shown the potential of using spirituality as a means to reduce the deleterious effects of adjustment strains among Asian international students (Chai, 2009;[4] Philip, Neuer-Colburn, Underwood, & Bayne, 2019;[37] Sato & Hodge, 2009).[40] Asian spirituality, based upon collectivist cultures, values harmony and connectedness (Potkar, 2013),[38] which can help protect against the negative impact of adjustment stress via seeking friendship, networking, and support (Hyun, Quinn, Madon, & Lustig, 2007;[14] Triandis, Bontempo, Villareal, Asai, & Lucca, 1988).[44] Because most members of collectivist cultures view all aspects of life as interconnected, close social connections with their in-groups help these international students feel complete, informed, and safe. For some Asian international students who study and live in rural areas in the US, where making in-group connections is relatively difficult, social disconnections with in-groups would normally add to their feelings of loneliness, sadness, hopelessness, and helplessness. In this situation, Asian spirituality presents opportunities for deeper cross-cultural understanding and transformation through critical self-reflection, personal analysis in relation to the external world, and the desire for connectedness. In this sense, coping with adjustment challenges can foster personal growth by increasing perceptiveness and self-understanding. By sharpening self-awareness and seeking connection with "other foreigners", many Asian international students successfully cope with stress and eventually achieve a higher level of acculturation they desire.

3. Spiritual Coping for Asian International Students

As briefly discussed in the Introduction section, spirituality is a broad construct with a multitude of meanings. It draws on plural and diverse experiences of human beings (Lindsay, 2002).[24] Existing literature defines spirituality as a search for meaning, connectedness, unity, transcendence, and ultimate human potential (Emmons, 1999);[7] a quest for authentic self, rooted in meaningful relationships and a source of energy that actualizes innate human capacity (McGhee & Grant, 2008);[29] and internalization and consistent manifestation of core values (Mattis, 2000).[28] Some scholars differentiate religiosity and spirituality, claiming that the former has to do with formally structured, institutional beliefs and practices, whereas the latter takes a more personal, subjective, and experiential path. Religiosity and spirituality share similar constructs, however. Both involve searching for meaning and purpose in life, valuing increased connectedness, seeking answers to existential questions, and are culturally conditioned and socially practiced (Chickering, Dalton, & Stamm, 2006;[6] Hill et al., 2000;[10] Pargament, 1999).[32] However, the construct of "spirituality" is more relevant for the focus of this article as some Asian countries, such as China and Vietnam, do not have religious freedom yet practice spirituality as part of their cultures. Therefore, this author will refer to the term "spirituality" for the remainder of the discussion as it provides a more comprehensive perspective of Asian students' spiritual development as a coping strategy for adjustment strains.

Spirituality embodies questions of larger purpose and meaning and describes how human beings conceptualize themselves in relation to the world around them. According to Emmons (2005),[8] there are four categories in which people strive to find meaning in life: achievement/work, relationships/intimacy, religion/spirituality, and self-transcendence/generativity. Being committed to

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one's work, as well as valuing a challenge, are aspects of achievement. The relationships/intimacy category refers to relating well to others, trusting them, and being altruistic and helpful. Expressions of religion/spirituality are shown by believing in an afterlife, having a personal relationship with God, and contributing to a faith community. Finally, generativity encompasses contributing to society, leaving a legacy, and seeing beyond self-interests. However, for many Asian international students, spirituality may transcend a religious component. Meaning-making is essential to human functioning and growth (Park, 2007).[35] It orients individuals to reflect on values that they hold as important, evaluate key experiences and encounters, and situate them within larger structures of significance. Spirituality provides a framework for individuals to construct meaning and purpose from their experiences, as well as directions for "living to the fullest." In the context of meaning-making, spirituality fosters resilience and optimism in stressful times (Mascaro & Rosen, 2005).[27]

For Asian international students, spiritual coping may pertain to developing a deeper understanding of their own culture and cultural identity. This journey of self-understanding is essentially spiritual. Studies have suggested that living in a new culture draws people closer to their own culture and help them gain greater respect and appreciation for their cultural identity (Hsieh, 2006;[12] Potkar, 2013;[38] Sato & Hodge, 2009).[40] As Asian students navigate a world of uncertainty, sharp cultural differences between collectivism and individualism may drive them to repeatedly examine their own culture and develop a better and clearer understanding of their values and beliefs. As a result, they will turn to spirituality as a cultural resource to cope with life's challenges. Cultural identity issues emerge in cross-cultural contexts, and the newly assigned identity of "international student"—which is deficit-oriented within the hegemony of the dominant culture and a marker for outsiders and an indicator of social exclusion—may intensify insecurity and vulnerability (Hsieh, 2006).[12] In addition, limited language skills not only restrict students' expression of themselves, but also prevent them from interacting with US-born students and faculty members, increasing the potential for social isolation. This may make them feel vulnerable, insecure, and even inferior (Ang & Liamputtong, 2008),[1] as well as create a gap between how they see themselves and how others view them (Jung, Hecht, & Wadsworth, 2007).[16] As a means to provide contexts to life's experiences, spirituality serves to amalgamate old and new identities, including the hoped-for self, in the process of acculturation. This enables students to seek a balance between self and the needs of the environment (Pecchenino, 2009),[36] while discouraging students from taking a defeatist approach.

Studies have indicated a positive link between spirituality and quality of life, and have identified beneficial health outcomes of spiritual coping (Krägeloh, Billington, Henning, & Chai, 2015; [20] Miller & Thoresen, 2003;[31] Park, 2007;[35] Seybold & Hill, 2001).[41] Spiritual coping refers to an attempt to use spiritual beliefs and practices to lessen the emotional distress caused by predicaments, thereby making suffering bearable by giving it meaning (Koenig, 2012).[19] Recent literature suggests that spirituality is a protective factor for mental health (Miller & Thoresen, 2003;[31] Seybold & Hill, 2001).[41] A college student sample showed that spirituality ameliorates adverse effects of stress on affective and physical adjustment through an experience of the sacred. For example, a deep communication with a higher power helps the students see challenges as being useful in the large context of life and provides inner peace that protects against negative feelings (Kim & Seidlitz, 2002).[18] Furthermore, those who report a high level of spirituality are more likely to adopt task-oriented and social diversion coping strategies. People with spiritual beliefs cope with difficulties better by attempting to solve the problem with an attitude of openness and interdependence, seeking social resources in times of suffering (Krok, 2008).[21]

The use of spirituality as a coping mechanism is found to be more prevalent among Asian students, and spirituality is used to fill the sense of loss resulting from relocating to a new culture (Chai, Krägeloh, Shepherd, & Billington, 2012).[5] It is comforting for students to rely on familiar spiritual practices. In addition to health benefits, spiritual coping seeks to reinstate social connection and provide cultural continuity that connects the students to their roots (Potkar, 2013).[38] A comparison study conducted by Hsu, Krägeloh, Shepherd, and Billington (2009)[13] revealed a positive relation between spirituality and the psychological and social quality of life among international students. International students rated themselves more spiritual than domestic students. Further exploring the topic, Chai, Krägeloh, Shepherd, and Billington (2012)[5] found that Asian students reported significantly lower scores on physical and environmental quality of life than European students, but adopted spiritual coping to reduce stress more than their European peers. The use of spiritual coping enhanced the psychological and social quality of life for Asian students. The two studies were conducted in New Zealand, but the findings could be transferrable to Asian students living in the US to some extent as New Zealand is also considered a Western culture. Similar results were found in an Indian

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graduate student sample (Potkar, 2013).[38] Indian students studying in the US found that the use of spiritual beliefs and practices provided them with personal and social support as well as "a grounding influence" in the face of challenges (p. 61).

Spiritual coping as outlined above is possible because of spiritual strivings, the theoretical mechanism. According to Emmons (1999, 2005),[7][8] spiritual strivings are the sacred-oriented goals related to ethics, ultimate purpose, and transcending self by connecting with a higher power through purposeful effort and commitment. Spiritual strivings increase self-determination, commitments, and potentiality, and in turn result in positive outcomes. Strivings may serve three functions. First, they empower people to persevere in the pursuit of goals under challenging situations. Second, they provide stability and support by directing people to what is ultimately important in life. Third, they offer a unifying philosophy of life and an integrating force that gives coherence and continuity in the face of social and cultural pressures that promote personality fragmentation. In times of crisis, people who use spiritual coping seek concrete forms (Pargament & Raiya, 2007),[34] such as practicing prayers, reading scriptures, exercising meditation/ mindfulness, seeking and/or expanding spiritual support through involvement with spiritual communities, and collaborating with a higher power (Philip, Neuer-Colburn, Underwood, & Bayne, 2019).[37]

Spiritual coping is particularly helpful for socially marginalized groups including ethnic minorities who have little power to change their environment (Pargament, 2002).[33] From the identity development perspective, international students are assigned the legal status "international students" by their host culture upon their arrival. This new identity within a Western culture dilutes their native cultural identities. In addition, this assignation relegates them to a minority group and puts them in a disadvantaged position (Lalonde & Cameron, 1993)[22] when compared to their US-born peers. When feelings of hopelessness and helplessness overpower international students, reframing their situations makes suffering more endurable and may increase self-efficacy. Understanding their social locations in the host culture and recognizing interconnectedness among international students can be empowering. However, the international student community is by nature fluid with its high level of mobility, which makes it even more difficult to take collective action to bring them in from the margins of the society so that they can voice their opinions and assert their rights. Such obstacles highlight the importance of institutional support for international students via integrating techniques and bolstering ethnically associated community-based programs and services.

In summary, cross-cultural challenges push Asian international students to pursue a new level of self-awareness to manage the stress of finding meaning. Adjusting to these stressors may alter their self-perceptions, and having limited resources to cope may lead to the development of emotional and behavioral health issues. Spirituality can provide these students with a coping strategy to move forward in the face of these unique obstacles. Spirituality also helps Asian students cultivate compassion toward the self and others, shifting their focus away from deficits and weaknesses, toward wholeness and well-being.

4. Implications for Practitioners and Educators

The examination of Asian international students' acculturation stress and use of spirituality as a coping mechanism suggests several implications for higher education and communities. Specific recommendations for university-based counselors, educators, and administrators are provided below.

Understanding Cultural Differences in Spirituality. When experiencing acculturation strains, Asian international students tend to rely more on internal resources, such as willpower, rather than seeking professional help (Wei et al, 2007).[45] In keeping with Asian cultures' emphasis on internal regulation, these students will not be inclined to seek help from university counseling services. In addition, those few students who do seek help will generally receive counseling services rooted in Western cultural values. The most common form is individual talk therapy with little regard to interdependence in healing (Yeh, Hunter, Madan-Bahel, Chiang, & Arora, 2004).[46] As a result, counselors may have limited knowledge and experience with non-Western cultures (Sue, Arredondo, & McDavis, 1992;[42] Zhang & Dixon, 2003).[47] This can create a mismatch between needs of Asian students and available services. Approaching cultural differences from only an intellectual perspective without referencing a spiritual dimension may hinder counselors from connecting spiritual practice to coping, and a lack of trust and rapport may prevent Asian students from seeing them as valuable resources. It is therefore recommended that university-based counselors in the US seek to expand their cultural and spiritual knowledge and understanding by attending pertinent training and talking to spiritual leaders in the international student community so that they become more aware of

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differences.

University-based counseling services tend to prioritize academic success, providing little or no interaction addressing students' spiritual issues. Counseling, however, is in essence a spiritual matter. Although it may not be explicitly labeled as spirituality, whatever concerns lead students to reach out to counselors involve students' core values and beliefs. However, in this author's observation during her eleven years in U.S. higher education, it is often assumed that spirituality is exclusively a matter of religion; talking about spirituality can cause legal and political problems; and spirituality is a subjective matter and is perceived as irrelevant to students' academic progress. Because spirituality promotes optimal human functioning with the goal of self-realization, disregarding (or discounting) spirituality only inhibits the healthy, holistic development of students. Given these concerns, it would be advisable for university-based counselors to assess the spirituality of the students they counsel and help them see the impact of their spirituality on their adjustment process and academic performance. Furthermore, university-based counselors can benefit from training and workshops that include themes and ideas reflecting a diverse range of faiths, noting differences between religion and spirituality and learning about the core elements of Asian spirituality.

Probing Spiritual Journeys. Each individual's spiritual journey is different and highly personal. It is most unlikely that all Asian international students' spiritual journeys follow the same path, albeit they may share the same or similar spirituality or faith. Therefore, it is important for college counselors, academic advisors, and administrators to understand the individual differences so as to assist each student accordingly. With this awareness, practitioners are more capable of engaging in meaningful conversations with each individual about his/her beliefs, values, life story, and the path of spirituality (Hodge, 2006;[11] Puchalski, 2006).[39] Such interaction and communication allow students to open up, share their authentic thoughts and feelings, which allows advisors and staff to provide meaningful support and guidance. Some questions in probing an international student's spiritual journey include: (1) Describe your life journey and how did you end up here?; (2) what are you afraid of, why?; (3) what is a meaningful life for you?; and (4) what does happiness mean to you? These questions will help practitioners develop a concise picture of a student's spiritual journey, understand the power and concerns of his/her spiritual practice, and thus develop a personalized relationship and strategy that can best support the student's needs. Understanding, respect, and customized support from staff will encourage international students to be more willing to speak with them about problems that they are encountering. This will assist students to maintain their spiritual equilibrium.

Incorporating Spirituality into Curricula and Classroom. Teaching or exploring spirituality in the classroom is not a common practice in current U.S. higher education. Some Asian countries have incorporated spirituality into daily school activities. For example, in South Korea where the author grew up, young students at some schools are asked in the morning to sit down and listen to encouraging messages or sometimes spiritual music to boost positive energy. While reflecting on the meaning of the messages, students set goals for the day and contemplate how best to fulfill the goals. Although the spiritual practice may be implemented differently in other countries, for many Asian students, spirituality is never isolating or static; it ceaselessly evolves. It may be extrapolated from this experience that spirituality is an essential part of who students are and is a source of affirmation and cultural understanding amid the growing feeling of otherness. Despite the established relevance and benefits, few graduate programs in U.S. higher education include elements of spirituality in their curriculum (Miller, 2001).[30] Integrating the realm of spirituality into classroom will help students see spirituality not just as an individual's inward journey, but also an act of being in communion with others in a learning environment. Learning to set a tone of openness and acceptance of people from diverse spiritual backgrounds will better prepare students to engage in "spiritual dialogue" with their peers, which in return will help them build trusting relationships with not only their peers in the classroom, but also people in communities and in their future workplaces.

5. Conclusion

Navigating between two cultures, many Asian international students in the US seek to derive meaning from their new experiences. The concerns they have, academic or social, are primarily related to making sense of the world around them and understanding who they are and who they are becoming. Spirituality provides a way for Asian international students to cope with intercultural challenges. Understanding spirituality is important for higher education providers when trying to help these students identify tools to reduce stress. To provide much-needed spiritual support, educators and practitioners in the US should make personal and institutional commitments by critically examining their values and beliefs and engaging in dialogues committed to fostering spiritual diversity and competence. These concerted efforts to expand inclusivity will contribute to building mutually transformative relationships, as well as promoting diversity and social justice.

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ARTICLE

Development and Initial Validation of the Personal and Social Responsibility Scale in Physical Education Settings

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ABSTRACT

This study aims to develop a valid instrument measuring personal and social responsibility in physical education settings that is suitable for Chinese high school students age 14 and above. This instrument consists of eight aspects, which builds upon the levels of responsibility in Hellison's (2011)[9] Teaching Personal and Social Responsibility Model (TPSR). The eight aspects in the measurement include goal, responsibility, respecting the rights and feelings of others, participation and effort, self-direction, caring, and value. The validation of the measurement was conducted based on the responses from 1091 high school students in Macau, China. The convergent and discriminant validity tests and a maximum likelihood confirmation factor analysis were performed using AMOS 21. The Bollen-Stine bootstrapping model was applied to adjust nonnormality data. Results supported a good validity and reliability of the items in the instrument.

1. Introduction

The use of physical education to educate and cultivate social skills and responsible behaviors has been promoted in K-12 education for decades. Hellison's Teaching Personal and Social Responsibility Model (TPSR), aiming to promote positive youth development through physical education, has been widely applied in teaching and research of K-12 physical education (Hellison, 1985,[8] 1991,[10] 2003,[12] 2011)[9].There has been a growing body of research supporting the practical effectiveness and immediate positive outcomes associated with TPSR-based programs (Cutforth & Puckett, 1999;[4] DeBusk & Hellison, 1989;[5] Hellison & Wright, 2003;[12] Martinek, Schilling, & Johnson, 2001;[16] Schilling, 2001;[20] Wright, White, & GaeblerSpira, 2004).[26]

2. Hellison's Teaching Personal and Social Responsibility Model (TPSR)

Created by Hellison, the Teaching Personal and Social Responsibility Model (TPSR), consists of five levels of responsibilities, including (1) respecting the rights and feelings of others, (2) effort, (3) self-direction, (4) caring and helping, and (5) transfer "outside the gym." These

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five levels of responsibility are aimed to promote positive youth development through physical education (Hellison, 1985,[8] 1991,[10] 2003,[12] 2011)[9].

The first level of responsibility - respecting the rights and feelings of others - suggests that students should control their behaviors in order not to disturb other students or teachers. Besides, they should address conflicts peacefully and accept other students as their partners (Payton, Wardlaw, Graczyk, Bloodworth, Tompsett, & Weissberg, 2000).[18] Effort means, in school physical education, students actively participate in all kinds of activities to improve their internal driving force. They are also expected to prepare for and practice before class. When faced with difficulties, they can also demonstrate the courage and perseverance to overcome difficulties, and the courage to face new challenges (Volet, 1997;[23] Salili, Chiu, & Lai, 2001)[19]. Self-direction requires students to independently carry out and complete the sports activities and tasks, and develop sports learning goals as well as plans. At the same time, they are expected not to be affected by others and adjust the pressure from their peers (Tough, 1979;[22] Csikszentmihalyi, 2014)[3].

Hellison's TPSR's model emphasizes self-conscious behavior of self-intrinsic motivation to expand responsibility, thus the fourth level responsibility calls for caring and helping (Andre, 1986;[1] Lanckneus, 2016)[14]. The fifth level, also the highest, is transfer "outside the gym," referring to the transferability of first four levels of responsibility in other aspects of life, and showing the same responsible attitude. This level is most challenging as it requires students to apply the four levels of responsibilities in other settings (Hellison & Walsh, 2002).[11]

To assess the effectiveness of TPSR model and to examine what impact that teaching personal and social responsibility has on students' positive development, a number of scholars in this field have conducted empirical studies to evaluate students' personal and social responsibility in physical education using TPSR (Schilling, 2001;[20] Watson, Newton, & Kim, 2003;[24] Guan, McBride, & Xiang, 2006;[7] Li, Wright, & Pickering, 2008;[15] Wright & Craig, 2011)[25]. Schilling (2001)[20] conducted a research on underserved youths' concepts about commitment to an after-school program that applied Hellison's TPSR Model. The result showed that program organization, personal characteristics, development of interpersonal relationships and environments are main factors that lead to commitment to personal and social responsibility.

Since the invention of Hellison's TPSR Model, several questionnaires have been developed based on the TPSR model for educators to guide planning, teaching, and assessing of personal and social responsibility in the context of physical education. Examples include Contextual Self-Responsibility Questionnaire - CSRQ (Dewald-Kaufmann, Bruin, Smits, Bjh, Oort, & Meijer, 2018),[6] Personal and Social Responsibility Questionnaire - PSRQ (Martins, Rosado, Ferreira, & Biscaia, 2015),[17] and Students' Responsibility in Physical Education Scale - SRIPES (Hsu, Pan, Chou, & Lu, 2014).[13]

Since most of the scales developed by Western scholars are based on the beliefs, faith, and attitudes rooted in the Western culture, it is unclear if these instruments hold the same validity and reliability values among Asian high school students. The purpose of this study, therefore, is to develop and test the validity and reliability of an instrument that measures Chinese high school students' level of personal and social responsibility in physical education.

3. Research Method

3.1 Participants

Participants were 1185 high school students (male: female = 52.7%:47.3%; M_{age}=16.78 [SD= 1.29]) enrolled in Grade 10 to 12 in 15 schools in Macau. In this study, 1091 valid responses were included for further analysis. To enhance samples' representativeness, this study adopts the stratified proportion sampling method, taking the school type as the first stratification, the grade as the second stratification, and the number of students in a grade as the third stratification. Participants were invited from a total of 39 classes from two public schools, and 13 private schools, with the following number, gender, and age breakdown - Grade 10, Grade 11 and Grade 12 were 365 (33.5%,M_{age}=15.95, male: female = 55.89%:44.11%, [SD= 1.13]), 498(45.6%, M_{age}=16.92, male: female = 50.40%:49.60%, [SD= 1.11]) and 228 (20.9%, M_{age}=17.84, male: female = 52.63%:47.37%, [SD= .99]).

3.2 Item Generation

The core values stated by Macau Education and Youth Affairs Bureau include goal, responsibility, respecting the rights and feelings of others, participation and effort, self-direction, caring, leadership, and value, which overlap to a great degree with the five levels of responsibility in Hellison's Teaching Personal and Social Responsibility Model (TPSR). Building upon both, the instrument consists of eight aspects: goal, responsibility, respecting the rights and feelings of others, participation and effort, self-direction, caring, leadership, and value.

The development of the specific measurement items in this study follows three principles. First, the questions are based on the eight aspects of the scale structure. Second, the items mainly focus on students' behaviors in physical

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education class, such as speech, attitude, action, expression. Third, responsibility behaviors include those that are obviously observed in physical education classes. In addition, elements of leadership and achievement goals are also incorporated into the development of the items, considering the requirements of high school moral education, civic education, and the outcomes of high school sport and leisure programs, required by Macau Education and Youth Affairs Bureau.

A convenience sample of 113 students' responses were collected and analyzed for the construct validity by using Exploratory Factor Analysis (EFA) and confirmatory factor analysis (CFA); Cronbach› α was used to test the construction reliability. Measurement items revision (i.e., deduction, addition, revision) was performed for several rounds. As a result, the measurement consists of 118 items in eight aspects.

3.3 Data Collection

A survey, titled Personal, Social Responsibility Scale for Physical Education (PSRSPE), along with a demographics section, was sent to 1185 high school students in two public schools and 13 private schools in Macau, China. Informed Consent was obtained before they fill in demographic Information such as gender and age. The instrument consisted of 77 items, which measure eight aspects of responsible behaviors in physical education classes. It used 11-point Likert scale, ranging from 0- "Almost never" to 10- "Always." Participants were asked to select the one that fits into a real situation in most of the time. The scores of both scale and subscales were calculated for the means of the rating items. Higher scores on PSRSPE indicate better and more positive responsibility behaviors in physical education setting.

3.4 Data Analysis

Statistical analyses involved in the scale validation started with exploratory factor analysis - EFA (Worthington & Whittaker, 2006), [41]. Maximum Likelihood Analysis (MLA) for with-item relation was also used to exam the correlation matrix (Tabachnick & Fidell, 2007).[21] Barlett's test, the Kaiser-Meyer-Olkin, and the square multiple correlation coefficients (R^2) were used to examine the structure underlying the items. Cronbach's alpha (Tabachnick & Fidell, 2007)[21] was applied to the construction of reliability. Second round Confirmatory factor analysis (CFA) was conducted for further analysis. The decision to accept or reject the model was informed by using Root-Mean, Square Error of Approximation (RMSEA), and the Comparative Fit Index (CFI).

4. Results & Discussion

4.1 Item selection

PSRSPE instrument consists of eight subscales of responsibility aspects - goal, responsibility, respecting the rights and feelings of others, participation and effort, self-direction, caring, leadership, and value. There were 7 to 14 items in each subscale and participants rated the statements on a point Likert scale of 11 which fits into the real situation, ranging from 0 "Almost never" to 10 "Always". These eight aspects were included to measure and investigate the responsibility behaviors in high school physical education classes in Macau.

Goal. There are 9 items in this subscale. Sample items include "I don't know why I should attend PE classes", "I think PE classes are boring and I soon feel tired of it" and "Even if I need to take PE tests or exams, I don't work hard to get a good grade".

Responsibility. There are 8 items in this subscale. Sample items include "When I am not listening to the teacher carefully, I wish other students to do the same", "I always cannot finish the task appointed by the teacher" and "Even if I have some questions, I don't turn to the teacher or other students".

Respecting the rights and feelings of others. There are 7 items in this subscale. Sample items include "I concentrate myself on the class and follow the classroom routine and order", "I can control my emotion and forgive others' mistakes" and "When conflict happens during activities or contests, I will immediately tell the teacher about it".

Participation and effort. There are 9 items in this subscale. Sample items include "When learning new technical movements, I will practice more than usual", "I am actively seeking to make breakthrough in order to improve my technical level" and "Even faced with failure, I won't feel upset and will keep practicing".

Self-direction. There are 9 items in self-direction subscale. Sample items include "I practice very hard the action skills taught by the teacher", "I know how to practice in stages" and "In terms of action skills, I maintain healthy competition with other students".

Caring. There are 10 items in this subscale. Sample items include "I don't make fun of the poor athletic performance of others", "When other students are injured, I always come forward to give them help and comfort" and "I help other students play out their potential in activities or contests".

Leadership. There are 11 items in this subscale. Sample items include "I ask my classmates to follow the rules of activities and contests", "I explain the overall plans and strategies to the team" and "I make good use of all kinds of opportunities to communicate and discuss with teachers and team members".

Value. There are 14 items in this subscale. Sample items include "In daily life, I respect the elder and myself", "When I am confronted with difficulties, I will try my best to resolve them" and "I take into account the feelings of people around me, e.g., classmates, friends, family members, colleagues".

4.2 Construct Validation

The PSRSPE consisted of a total of 77 items across eight subscales, including goal (9 items), responsibility (8 items), respecting the rights and feelings of others (7 items), participation and effort (9 items), self-direction (9 items), caring (10 items), leadership (11 items) and value (14 items). Table 1, below, reports the overall convergent validity and discriminant validity of eight domains in PSRSPE.

Table 1. Test for convergent validity and discriminant validity for Caring, Effort, Goal, Leadership, Responsibility, Self-Orientation and Value

	Convergent Validity		Discriminant Validity							
Dimension	Cronbach	AVE	Caring	Effort	Goal	Leadership	respective	Responsibility	Self	Value
Caring	.939	.671	.819	.600**	-.321**	.728**	.508**	-.324**	.670**	.667**
Effort	.955	.739	.600**	.860	-.456**	.640**	.565**	-.377**	.800**	.608**
Goal	.925	.630	-.321**	-.456**	.794	-.320**	-.207**	.747**	-.345**	-.348**
Leadership	.966	.746	.728**	.640**	-.320**	.864	.422**	-.244**	.695**	.640**
Respective	.908	.651	.508**	.565**	-.207**	.422**	.807	-.243**	.502**	.542**
Responsibility	.916	.632	-.324**	-.377**	.747**	-.244**	-.243**	.795	-.290**	-.362**
Self-direction	.929	.640	.670**	.800**	-.345**	.695**	.502**	-.290**	.800	.599**
Value	.963	.679	.667**	.608**	-.348**	.640**	.542**	-.362**	.599**	.824

***. Correlation is significant at the 0.01 level (2-tailed). Bold is the square root of the average variance extracted*

Convergent validity measures how well different sub-constructs converge to the main construct. In this study, we would like to know how the eight domains, convergent to PSRSPE. Convergent validity is measure by Average Variance Extracted (AVE). A value of AVE that is above 0.5 indicates convergent validity. As Table 1 shows, all eight scales have AVEs that are above 0.5, the instrument, therefore, has very good convergent validity.

Discriminant validity is assessed to measure the extent to which constructs differ. It involves comparing the square root of the average variance extracted for a given construct with the correlations between that construct and all other constructs. Table 1 shows all have very good discriminate validity from .794 to .860. All subscales are clearly distinctive from others. When examining the correlation of the eight subscales, we have found Caring is positive with Effort, Leadership, Respective, Self-direction, and Value, but negative with Goal and Responsibility. Moreover, the Goal is negative with most of subscales, including Caring, Effort, Leadership, Respective, self-direction, and Value.

4.3 Results of Testing for Non-Normal Distribution

When all items were included into the subscale, the analysis of all data of eight subscales did not all fit the specified factor model. This warrantied a testing for multivariate normality through calculating Mardia's coefficient, and the sample showed the assumption of multivariate normality to be violated (See Appendices:1-8). Therefore, the Bollen-Stine bootstrapping (B-S bootstrapping) procedure was applied (Bollen & Stine, 1992).[2] See Table 2 for the results.

After the B-S bootstrapping adjustment, the results for the eight subscales are shown as follows. "Goal" (x^2 =52. 491, df=27, x^2 / df=1. 944, RMSEA =. 055, GFI =. 992, AGFI=. 976, CFI= 0. 996.), "Responsibility" (x^2 = 38. 348, df=20, x^2/df=1. 917, RMSEA=. 029, GFI =. 992, AGFI =. 962 and CFI=. 996)., "Respecting the rights and feelings of others" (x^2=25. 693, df=14, x^2/df=1. 835, RMSEA =. 029, GFI=. 995 and CFI =. 998)., "Participation and Effort" (x^2=58. 792, df=27, x^2/df=2. 177, RMSEA =. 033, GFI=. 994, AGFI=. 982 and CFI = 0. 997), "Self-Ori-

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entation" (x^2 = 44. 302, df=27, x^2/ df=l. 641, RMSEA =. 024, GFI =. 994, AGFI =. 982 CFI= 0. 998)., "Caring" (x^2= 62. 741, df=35, x^2/df=1. 793, RMSEA =. 027, GFI= .994, AGFI=. 985 and CFI= 0. 996), "Leadership" (x^2 = 45. 943, df=27,x^2/df=1. 702, RMSEA=.025, GFI=. 992, AGFI =. 975 and CFI = . 997) and "Value"(x^2 = 157. 223, df=78, x^2/df= 2.016, RMSEA=.031,GFI=.989,AGFI=. 983 and CFI = . 994).

Table 2 The results of the Bollen-Stine Bootstrapping procedure

Sub Scale	Chi-Square	Df	Chi/Df	RMSEA	GFI	AGFI	CFI	SRMR
Goal	669.899	27	24.811	0.148	0.854	0.757	0.902	0.0509
*Goal	52.491	27	1.944	0.055	0.992	0.976	0.996	0.0509
Responsibility	213.707	20	10.685	0.095	0.951	0.911	0.962	0.0318
*Responsibility	38.348	20	1.917	0.029	0.992	0.962	0.996	0.0318
Effort	830.432	27	30.757	0.165	0.826	0.709	0.916	0.0414
*Effort	58.792	27	2.177	0.033	0.994	0.982	0.997	0.0414
Respect	928.015	14	66.287	0.245	0.776	0.552	0.827	0.0855
*Respect	25.693	14	1.835	0.028	0.995	n/a	0.998	0.0855
Self-direction	364.319	27	13.493	0.107	0.92	0.866	0.953	0.031
*Self-direction	44.302	27	1.641	0.024	0.994	0.982	0.998	0.031
Caring	1252.818	35	35.795	0.179	0.773	0.643	0.877	0.0696
*Caring	62.741	35	1.793	0.027	0.994	0.985	0.996	0.0696
Leadership	1219.712	27	45.175	0.201	0.84	0.733	0.784	0.109
*Leadership	45.943	27	1.702	0.025	0.992	0.975	0.997	0.109
Value	2521.059	78	32.321	0.17	0.755	0.671	0.829	0.23
*Value	157.223	78	2.016	0.031	0.989	0.983	0.994	0.023
* The result of the Bollen-Stine Bootstrapping								

The results, as shown above, provide statistically significant evidence that all subscales have unique predictive capabilities providing support for PSRSPE.

4.4 Summary

The findings of this study suggest that the Personal and Social Responsibility Scale for Physical Education (PSRSPE) is a valid measure of the responsibility behaviors of students in physical education setting in Macau, China. The results of the data analysis show the eight subscales' convergent and discriminant validity are good. At the same time, results of structural equation modeling (SEM) suggest that subscales have strong relationships with the total scale. PSRSPE shows higher than acceptable validity and reliability.

5. Conclusion

The results of this study provide support for PSRSPE as a valid instrument to assess the personal, social responsibility behaviors in physical education class, and it is developmentally appropriate for Macau adolescents with adequate internal consistency. To our knowledge, this is the first compressive scale targeting high school students in China. It could be used to measure responsibility behaviors in physical education, thus provide teachers a useful tool to assess students' behaviors in physical education setting. Future studies are needed to further test the validity and reliability of the instrument by using it with high school students in other areas of China. Survey of both teachers' and students' perceptions of the instrument will also further improve its face validity

[Contributorship Statement] Lei, S. M. contributed to study design, recruitment of participants, data collection, and critical revision of the manuscript. Wong, S.P., and Lam, S.I. contributed to data analysis, interpretation of data, and critical revision of the manuscript. Liang, T. assisted in the interpretation of the results and final revision of the manuscript.

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Appendices: Assessment of Normality

Appendix1: Assessment of normality (Goal)

Variable	min	max	skew	c.r.	kurtosis	c.r.
b9	0	10	1.463	19.725	1.974	13.309
b8	0	10	1.234	16.638	1.077	7.261
b7	0	10	1.28	17.266	1.532	10.328
b6	0	10	0.903	12.175	0.47	3.17
b5	0	10	0.866	11.679	0.328	2.208
b4	0	10	0.885	11.928	0	0.003
b3	0	10	1.229	16.567	1.078	7.265
b2	0	10	1.136	15.313	0.901	6.075
b1	0	10	1.218	16.419	0.975	6.577
Multivariate					91.283	107.138

Appendix2: Assessment of normality (Responsibility)

Variable	min	max	skew	c.r.	kurtosis	c.r.
c8	0	10	1.674	22.57	2.456	16.56
c7	0	10	1.015	13.692	0.613	4.132
c6	0	10	1.438	19.39	1.8	12.133
c5	0	10	1.579	21.298	2.428	16.372
c4	0	10	0.997	13.451	0.804	5.423
c3	0	10	1.268	17.103	1.35	9.102
c2	0	10	1.118	15.079	1.004	6.769
c1	0	10	1.356	18.288	1.351	9.109
Multivariate					81.183	105.996

Appendix3: Assessment of normality (Respecting the rights and feelings of others)

Variable	min	max	skew	c.r.	kurtosis	c.r.
d7	0	10	-0.487	-6.569	-0.304	-2.052
d6	0	10	-0.218	-2.942	-0.788	-5.316
d5	0	10	-0.478	-6.442	-0.334	-2.252
d4	0	10	-0.822	-11.087	0.166	1.122
d3	0	10	-0.9	-12.133	0.247	1.668
d2	0	10	-1.013	-13.659	0.656	4.426
d1	0	10	-1.367	-18.438	0.888	5.988
Multivariate					43.195	63.552

Appendix4: Assessment of normality (Participation and Effort)

Variable	min	max	skew	c.r.	kurtosis	c.r.
ee9	0	10	-0.404	-5.452	-0.449	-3.027
ee8	0	10	-0.393	-5.3	-0.363	-2.448
ee7	0	10	-0.316	-4.255	-0.503	-3.39
ee6	0	10	-0.301	-4.054	-0.555	-3.739
ee5	0	10	-0.378	-5.092	-0.693	-4.673
ee4	0	10	-0.458	-6.179	-0.629	-4.242
ee3	0	10	-0.372	-5.01	-0.56	-3.778
ee2	0	10	-0.49	-6.611	-0.581	-3.919
ee1	0	10	-0.579	-7.812	-0.213	-1.438
Multivariate					92.745	108.853

Appendix5: Assessment of normality (Self-Orientation)

Variable	min	max	skew	c.r.	kurtosis	c.r.
f9	0	10	-0.353	-4.759	-0.477	-3.217
f8	0	10	-0.33	-4.443	-0.461	-3.112
f7	0	10	-0.243	-3.279	-0.427	-2.879
f6	0	10	10.163	137.049	107.554	725.156
f5	0	10	-0.278	-3.751	-0.585	-3.947
f4	0	10	-0.183	-2.466	-0.568	-3.831
f3	0	10	-0.199	-2.685	-0.552	-3.724
f2	0	10	-0.35	-4.724	-0.304	-2.047
f1	0	10	0.019	0.255	-0.614	-4.138
Multivariate					165.853	194.659

Appendix6: Assessment of normality (Caring)

Variable	min	max	skew	c.r.	kurtosis	c.r.
g10	0	10	-0.364	-4.904	-0.473	-3.189
g9	0	10	-0.453	-6.105	-0.305	-2.057
g8	0	10	-0.344	-4.643	-0.559	-3.771
g7	0	10	-0.54	-7.285	-0.214	-1.446
g6	0	10	-0.547	-7.377	-0.117	-0.791
g5	0	10	-0.627	-8.461	-0.007	-0.049
g4	0	10	-0.532	-7.173	-0.336	-2.266
g3	0	10	-0.552	-7.446	-0.307	-2.072
g2	0	10	-0.572	-7.709	-0.222	-1.498
g1	0	10	-0.567	-7.649	-0.674	-4.547
Multivariate					98.113	104.593

Appendix7: Assessment of normality (Leadership)

Variable	min	max	skew	c.r.	kurtosis	c.r.
b9	0	10	1.463	19.725	1.974	13.309
b8	0	10	1.234	16.638	1.077	7.261
b7	0	10	1.28	17.266	1.532	10.328
b6	0	10	0.903	12.175	0.47	3.17
b5	0	10	0.866	11.679	0.328	2.208
b4	0	10	0.885	11.928	0	0.003
b3	0	10	1.229	16.567	1.078	7.265
h2	0	10	-0.172	-2.323	-0.679	-4.578
h1	0	10	-0.319	-4.303	-0.539	-3.632
Multivariate					72.366	84.935

Appendix8: Assessment of normality (Value)

Variable	min	max	skew	c.r.	kurtosis	c.r.
i14	0	10	-0.954	-12.859	0.639	4.311
i13	0	10	-0.673	-9.075	0.1	0.671
i12	0	10	-0.689	-9.292	0.078	0.525
i11	0	10	-0.636	-8.572	0.116	0.78
i10	0	10	-0.666	-8.984	0.198	1.336
i9	0	10	-0.663	-8.946	0.164	1.103
i8	0	10	-0.667	-8.996	0.111	0.749
i7	0	10	-0.758	-10.228	0.375	2.528
i6	0	10	-0.54	-7.28	-0.248	-1.67
i5	0	10	-0.862	-11.618	0.405	2.733
i4	0	10	-0.865	-11.658	0.487	3.281
i3	0	10	-0.698	-9.41	0.364	2.453
i2	0	10	-0.833	-11.234	0.451	3.04
i1	0	10	-1.047	-14.123	1.007	6.789
Multivariate					215.932	168.484

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SHORT REPORT

The Impact of Hearing Loss on Health: Interprofessional Guidance for Health and Primary Care Providers (PCPs)

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ABSTRACT

In the United States, approximately one in eight (13 percent, or 30 million) individuals aged 12 years or older has bilateral hearing loss. When unaddressed and untreated, hearing loss is associated with and contributes to other significant health issues; specifically, social isolation, depression, stress, and anxiety, incidental falls, dementia and impaired cognition, and reduced quality of life. This is a public health concern. Health and primary care providers are in a unique position to have a positive impact by probing the hearing of the patients they see, providing information, and making appropriate referrals to reduce deleterious effects when this impairment occurs.

Abbreviations: Hertz (Hz); High frequency hearing loss (HFHL); Personal listening devices (PLDs); Sensorineural hearing loss (SNHL)

Format: Small group discussion, classroom and clinical practicum settings.

Target audience: The student and practicing health professions (e.g. occupational and physical therapy, psychologists, physician assistants, nursing, and medical) involved and the relevant point in their training and practice.

1. Introduction

Hearing loss affects individuals of all ages. World-wide, it is estimated that approximately 466 million individuals have some type of disabling hearing loss; this number is predicted to rise to 900 million by 2050 (World Health Organization [WHO], 2020).[22] Further, a disproportionate burden of hearing loss occurs in lower income countries due to lack of availability of hearing aids and/or hearing assistive technologies. In the United States, approximately one in eight (13 percent, or 30 million) individuals aged 12 or older has bilateral hearing loss (Lin, Niparko, & Ferrucci, 2011).[15] Fung and colleagues (2013)[8] found that 24 percent of adults between 18 and 45 years of age experience bilateral high-frequency (3,000-8,000 Hertz [Hz]) hearing loss (HFHL) and/or tinnitus (ringing in the ear) attributed to excessive use of personal listening devices (PLDs; e.g. iPods, MP3 players). Berg and Serpanos (2011)[3] found that HFHL doubled over a 24-year period from 10.1% in 1985 to 19.2% in 2008 in a group of 8,710 adolescent females in a residential foster care facility. Compared to the general adolescent population, this group of female adolescents presented with a higher percentage of bilateral mild or greater degrees of HFHL at two or more frequencies including 3,000, 4,000, and 6,000 Hz. Use of PLDs increased four-fold, from 18.3% in 2001 to 76.4% in 2008. Of the total

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number reporting tinnitus, 99.7% also reported regular PLD use. A significant relationship was found between PLD use and reported tinnitus and HFHL irrespective of time of use of PLD.

Further, age-related hearing loss, often referred to as presbycusis, has been reported to occur in approximately one in three individuals between the ages of 65 and 74 years living in the United States, increasing to nearly half of those older than 75 years (National Institute on Deafness and Other Communication Disorders [NIDCD], n.d.).[18] Presbycusis is different from the hearing loss that occurs in younger individuals. Age-related hearing loss is complex and involves alterations in the peripheral and central auditory systems as well as challenges regarding cognition and working memory. Onset is gradual. Presbycusis affects the sensory and/or neural components of the inner ear, auditory nerve, and central auditory system and is characterized by sensorineural hearing loss (SNHL). A typical audiometric configuration is sloping with better hearing sensitivity in the lower frequencies than high frequencies, of mild to moderate degree, and symmetrical in both ears (Howarth & Shone, 2006).[10] Initially, the hearing loss is observed around 4,000 Hz with gradual involvement of the mid to lower frequencies. Chien and Lin (2012)[4] estimated that 23 million adults 50 years and older in the United States have untreated hearing loss and that only one in seven uses a hearing instrument. Reasons why so few older adults use hearing aids include that they are not recommended, they are costly, and/or that there is the perception they are not needed (Gopinath, Schneider, Hartley, Teber, McMahon, et al., 2011).[9] Unaddressed and uncorrected hearing loss in older adults not only has consequences regarding communication, but also contributes to reduced quality of life (QoL), poor psychosocial well-being, depression, and cognitive dysfunction (Arlinger, 2003).[2]

Hearing loss not only affects the lives of individuals with this impairment but their families as well. It has an impact on communication, language learning, academic achievement, and reduced participation in the workforce (WHO, 2017).[21] When unaddressed and untreated, hearing loss is associated with and contributes to other health issues; specifically, social isolation, depression, stress, and anxiety, incidental falls, dementia and impaired cognition, and reduced QoL. Deal and colleagues (2019)[6] found a significant relationship in adults 50 years of age or greater diagnosed with untreated hearing loss and increased incidence of other health conditions; specifically, a 10-year increased risk of dementia (3.2 per 100 persons), depression (3.6 per 100 persons), falls (6.9 per 100 persons), and myocardial infarction (1.1 per 100 persons). In addition, some chronic diseases (e.g. diabetes, hypertension) put individuals at even greater risk for impaired hearing. Frisina and colleagues (2006)[7] found significant differences in inner ear auditory function in older individuals with type 2 diabetes when matched with older adult controls; specifically, reduced cochlear reserve as measured by otoacoustic emissions, decreased low-frequency hearing thresholds, and poorer speech recognition scores. This is a public health concern.

Hearing conservation and protection, education to promote hearing health, screening, identification, and appropriate and effective treatment (e.g. medical, hearing aids, cochlear implants, and communication strategies through audiologic rehabilitation) mitigate some of the health and risk factors associated with hearing loss. Addressing hearing loss has been shown to be cost effective, reducing burdensome health care issues and costs, and improving QoL (WHO, 2017).[21] Often, health and primary care providers (PCPs) are in a position to probe hearing health as part of their care and service delivery.

2. Depression, Anxiety, and Stress and Hearing Loss

Kalayam and colleagues (1991)[12] found an association between age of onset of depression and hearing loss within the speech frequencies (500, 1,000, 2,000, and 4,000 Hz); 85% of participants experienced depression when sensorineural hearing loss of 40 decibel hearing level (dB HL) or greater occurred at 1,000 and 2,000 Hz. The self-imposed social isolation that often ensues due to hearing loss contributes to depression, stress, anxiety, and loneliness. Lawrence and colleagues (2019)[13] conducted a systematic review and meta-analysis to examine hearing loss and depression in older adults. Thirty-five cross-sectional and/or cohort studies examining 147,148 participants met inclusion criteria. They found that hearing loss increased the odds of depression in older adults. Further, increased levels of anxiety and stress can lead to cardiac and inflammatory diseases and potentially, unhealthy lifestyle decisions (e.g. adoption of excessive alcohol use) and visceral obesity (Jayakody et al., 2018).[11] Jayakody and colleagues (2018)[11] found that the severity of hearing loss increased the severity of depression, stress, and anxiety. Participants in their study with moderate-to-severe and profound sensorineural (inner ear) hearing loss experienced greater levels of depression, stress, and anxiety as well as other health issues than individuals with hearing within normal limits. Further, the

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evidence that exists showing anatomic and physiologic changes in cortical and subcortical structures as a result of depression, stress, and anxiety are also implicated in presbycusis; specifically, reduced grey matter in the temporal and frontal gyri, primary auditory cortex, and hypothalamus (Jayakody et al., 2018).[11]

3. Cognitive Impairment and Dementia

Individuals with untreated hearing loss are at greater risk for developing cognitive decline, impairment, and dementia. Liu and Lee (2019)[16] examined three groups of adults with hearing loss; between 45 and 64 years, between 65 and 74 years, and 75 years and greater. They found that not only the incidence of dementia increased in individuals with hearing loss, but the risk of incurring dementia was greatest for adults in the age range of 45 to 64 years. Loughrey and colleagues (2018)[17] conducted a systematic review and meta-analysis to examine if an association between presbycusis and cognitive impairment existed. Thirty-six studies met their inclusion criteria. They found that presbycusis could be a potential biomarker for the increased threat of cognitive decline, impairment, and dementia, but not Alzheimer's disease (Loughrey, Kelly, Kelley, et al., 2018).[17]

Dawes and colleagues (2015)[5] found that hearing aid use was associated with better cognition, independent of social isolation and depression in a subsample (n = 164,770) from the United Kingdom (UK) Biobank data set in adults aged 40 to 69 years who completed a hearing test. Improved cognition could partially be attributed to increased social engagement due to improved audibility of the speech signal. Finally, dual sensory impairment has been found to be associated with increased cognitive and functional decline (Lin, Guitierrez, Stone, et al, 2004)[14] and older adults often have both vision and hearing issues.

4. Falls and Hearing Loss

Agmon and colleagues (2017)[1] conducted a systematic review of the association of falls, postural stability, and mobility in older adults with hearing loss. Degree and severity of the hearing loss was found to be related to greater difficulties in agility and increased falls. These authors postulated that the association between falls and hearing impairment may be due to the physical, cognitive and behavioral processes involved in the auditory system (Agmon, Lavie, & Doumas, 2017).[1] Deal and colleagues (2019)[6] also found an increased incidence of falls, 6.9 per 100 persons, in individuals with hearing loss.

5. Suggestions for the Health and Primary Care Provider and Conclusions

For adults, two tools, the Hearing Handicap Inventory for Adults-Screening (HHIA-S; Newman, Weinstein, Jacobson, & Hug, 1991)[19] and the Hearing Handicap Inventory for the Elderly-Screening (HHIE-S; Ventry & Weinstein, 1983),[20] are easy and time-efficient questionnaires (10 items) to incorporate into the PCP practice. They can be accessed at no charge from https://105b31079a1ba381f52eac2ec5114feb632a1114f20df0e72453.ssl.cf2.rackcdn.com/Sidebar/59f9dc02-a7e0-4762-8266-315b0ad284e6/HHIE.pdf and https://www.lifescandiabetesinstitute.com/sites/default/files/blog_attachment/Hearing%20Handicap%20Inventory%20for%20the%20Elderly.pdf.

When speaking to the individual with hearing loss, face them, speak at a typical volume, use a slightly slower rate of speech to increase audibility and intelligibility of the high frequency consonants that are lower in intensity compared to vowels, reduce competing background noise when possible, and ensure the topic discussed is known and clarified to the patient. Context-based communication facilitates comprehension and has been shown to be beneficial. Rephrasing has also been shown to be effective for improving communication. Hearing loss is frustrating for both the person with the hearing loss and their communication partners. Audiologic rehabilitation strategies must address the frustrations of both the person with the hearing loss and their family members/caregivers. Communication repair strategies require implementation by both parties. These strategies improve communication even in challenging listening environments. Health and primary care providers can have a positive impact by probing the hearing of the patients they see, providing information, and making appropriate referrals to reduce deleterious effects when this impairment occurs.

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ARTICLE

Need Saliency and Academic Behavior of Technical Students in India: Implications for Career Sustaining Competences

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ABSTRACT

In the current scenario of rapid expansion of higher education, it becomes imperative to study the dynamic factors underlying quality education, student motivation and learning outcomes. Most of the literature available as on date are predominantly based on western studies, where the individual's personal achievement, autonomy, control, power are considered to be most important. But these western models often influenced by their individualistic philosophy and cultural values are quite inapplicable for pluralistic Indian society, where we believe in collaboration and teamwork. Rare attempts have been made to develop an indigenous model to measure these attributes in our society. The present study is first of its kind to assess the salient and non-salient needs of technical students pursuing their studies in India. Authors have identified measures of the students' engagement in various academic, co-curricular activities and their performance outcomes. A sample of Four-hundred and Sixty-five (N=465) engineering/science students were collected through purposive sampling exclusively from IIT Kharagpur , a premier technical institute in eastern India where students across the country got selected and joined on merit basis, through the national level joint entrance examination for Engineering and Science, the toughest examination in the country, known as IIT-JEE. Career implications are discussed in light of the major findings.

1. Introduction

In the last two decades higher education in India has expanded rapidly, although with numerous challenges and diversities. The present century job scenario is leading our youths towards switching jobs more often than ever before across the sectors and subject disciplines. The global economic scenario is also ever changing, thus causing further transformations in the job market across the world. Additionally, with increasing automation, scientific innovations and cloud technologies many low skilled jobs have become redundant. A large number of multinational companies are downsizing their human resources and pushing jobs from middle level to high skilled, complex and judgment based jobs. The job roles and responsibilities are constantly changing. As a consequence the higher education sector in India has also felt its impact; specifically the technical institutes are

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facing problems in campus placements of engineering students. Moreover, in the corporate sector there is an increasing demand for corporate training services that cater to the re-skilling and up-skilling needs of working professionals. In order to mitigate some of these challenges the ministry of higher education, Government of India has taken up initiatives to launch few programme/s like 'Skill India', 'Make in India', 'Digital India', 'Start-up India' etc. to boost the industry/business infrastructure and job sector. Thus, in the Indian context it becomes imperative to assess the diverse needs of our youths, train and educate them to become highly competent and motivated to join the global workforce or become successful entrepreneurs. To become a developed nation and compete globally in the current knowledge/intellectual capital based economy, India needs not only good quality of higher learning institutes/universities to produce bright graduates/professionals, but should support the high quality of applied/basic research needed for expanding the Indian economy.

Therefore, in the current scenario of rapid expansion of higher education, it becomes imperative to study the dynamic factors underlying quality education, student motivation and learning outcomes. Hence, the success of education system and higher education per se should focus more on students' salient needs, their motivations, which largely depend on how well the institutional educational resources are utilized. Higher education institutions today emphasize on mass education which results in increasing access to tertiary education. At the same time with the corporatization and privatization of education in India, we are facing the challenge of developing our own education model (instead of adopting any Euro American models) which can meet our emerging (local) needs as well as respond to the global demands. Thus, it is of paramount importance to apply the need saliency model in Indian context to reexamine our major educational objectives at higher education level. Hence, it becomes imperative here to identify the salient needs of students in academic institutions and try to make provision for fulfilment of those needs. It's also vital to find out the positive parameters of better academic involvement and learners' satisfaction. This can ensure quality, continuous learning, and success.

2. Overview of literature

i) Theoretical background

Saliency refers to the value individuals place on life roles (e.g., study, work, family, home etc.), which can change over time (Sharf, 1997).[24] The construct of need saliency assumes that the hierarchy of human needs changes over time, as well as across various subjects of population. Empirical studies show that people attach greater priority to certain needs as compared to other needs. The saliency of the needs in case of any individual is primarily determined by his / her socialization in a given culture and is modified by present work condition or academic environment. Different groups of individuals like students, teachers, managers, doctors etc. may develop different need saliency patterns because of different cultural background, socialization training and priorities in life. They may value intrinsic and extrinsic performance outcome very differently. According to 'Self Determination Theory' (SDT) people are motivated to perform or learn, by one of these two motivational orientations: a) intrinsic motivation or learning because one finds the course content interesting; or b) extrinsic motivation, which is learning as a means to an end (i.e., grades, praise, high paid jobs) (Deci & Ryan, 1991).[6] The absence of any such motivation results in lack of motivation to learn (*amotivation*). This theory explains that fulfilment of intrinsic need is more important to personal growth and learning than fulfilment of extrinsic needs. Thus, the most meaningful and successful learning occurs when students are motivated intrinsically (Reeve et al., 2004).[21] As per SDT there are three primary components to intrinsic motivation for learning such as: 1) the need for autonomy, which occurs when students choose, on their own, to become engaged in learning because the subject and activities are closely aligned to their interest and values (Reeve et al. 2004).[21] 2) The second factor is competence, or the need to be effective in interaction with the environment and the learners need to test challenge and develop in new ways. The third requisite factor of intrinsic needs is relatedness or the need to establish close, secure relationships with others. Similarly there are three forms of extrinsic motivation (Reeve et al. 2004).[21] The least effective form is external regulation, which occurs when students are motivated purely by rewards and punishments from outside sources. The second form of extrinsic motivation is introjected regulation which occurs when students who are motivated by rewards and punishments begin to partially internalize this external pressure to learn. The third one is identified regulation that occurs when the externalized pressure to learn becomes internalized by the student (self-regulation). Research has shown that external and introjected regulation negatively impact learning, but identified regulation can have a positive impact on learning, when the material is considered import-

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ant but uninteresting to the learner (Reeve et al., 2004).[21]

Some of the external events or the factors in the learning environment often support or hinder intrinsic motivation, such as surveillance imposed goals, threat of failure / punishment, competition, evaluation system etc. serve to undermine students' intrinsic motivation towards learning. At the same time empirical findings have indicated that opportunities for self-direction, self-expression, multiple choices in course selection, positive feedback, acknowledgement of feelings by teachers/mentors, challenging assignments, co-curricular activities can also enhance the intrinsic motivation towards learning. Cross-cultural research has also shown that cultural variation is likely to influence students' motivation in academic front. One of the important behavioral distinctions observed among various cultures of the world is the differences between individualism and collectivism (Triandis, 1999).[26] Individualistic societies (e.g. Britain, U.S.) tend to value autonomy, competition, emotional detachment from one's in group (e.g., family ,clan etc.) and place personal goals/success over group success/achievements (Phinney,1996),[20] whereas collectivist societies (like Japan, India) value interdependence, group harmony, cooperation, emotional attachment within the group and prioritizing / emphasizing the collective achievements or group goals over individual goals / success (Triandis et al., 1998).[27] Self Determination Theory (SDT) also asserts that the basic psychological conditions like autonomy, competence, relatedness are the natural phenomena which apply to all human beings regardless of gender group or culture. However, some cross cultural studies have raised the question, whether autonomy is a necessary condition for well-being in collectivist societies also (Oishi, 2000;[19] Carver & Scheier, 2000;[4] Miller,1997).[17]

Similarly another motivational model called Job Involvement Theory (JIT) has also recognized the impact of varying cultural norms on motivational orientation (Kanungo, 1982).[13] This asserts that intrinsic and extrinsic motivations guide all human behavior. Even though not focused on motivation towards academics and learning Kanungo (1982)[11] stated that in the work setup the degree of job involvement (by the workers) is primarily determined by the ability of the job to fulfil the workers' most salient needs both intrinsic as well as extrinsic. In his study Kanungo (1982)[11] found that workers who value western individualistic norms often believe that work is central to satisfying salient intrinsic needs for autonomy and competence, and salient extrinsic needs for pay, promotion and personal recognition. Employees socialized in collectivist cultures are more likely to view work as a means of satisfying the salient intrinsic needs like relatedness, societal improvement, equality and harmony, even at the cost of other needs like autonomy or financial gains. However, in job involvement contrary to the dominant view Kanungo (1982)[11] found that managers who are motivated by extrinsic needs like pay, promotion etc. tended to be more involved in their jobs in comparison to their counterparts whose salient needs are more intrinsic and less involved in their jobs . In particular this is scenario in corporate world. But this model (JIT) has not been applied in educational field to assess the learners' academic involvement. Thus, it motivates the present author/s to assess the different kinds of intrinsic and extrinsic salient needs of students in higher academic institutions and how these influence their academic involvement in the campus. As the researchers are based in a premier technical institute in India, they preferred to study the salient needs of technical students who are selected through national common entrance examination and come here from all across the country.

ii) Empirical Research

Using the SDT, Deci and Ryan (1991)[6] have found that successful students are likely to have intrinsic motivational orientation such as a) they are autonomous learners who seek knowledge for its own sake; b) They have demonstrated competence and seek to challenge them in order to grow; c) They feel socially connected with others. Similarly, students who are at risk for low academic achievement at college have either a motivational orientation towards learning nonself determined forms of extrinsic motivation. If we analyze students' academic achievement and persistence from JIT perspective, it would suggest that successful college students who have internalized individualist cultural norms are likely to succeed if the campus environment provides opportunities for them to satisfy their intrinsic needs for autonomy and competence. At the same time it also explains that successful individualist oriented students may also be motivated by extrinsic needs for high CGPA/Grades in order to obtain successful, well-paying /high profile jobs after completion of the degrees. This also suggests that collectivist oriented students (cooperative/group minded) may be at risk for academic under–achievement ,if they seek to fulfill the salient intrinsic need for relatedness at the expense of the need for autonomy, competence and extrinsic rewards (high CGPA/grades/recognition/scholarships etc.).Moreover, empirical studies on achievement motivation have identified different types of goal orientation among students, the

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motivational processes associated with these goals and the conditions that elicit them. These goal orientations have been named as task involved versus ego involved (Maehr, 1983;[14] Nicholls, 1984),[18] as learning oriented versus performance oriented (Dweck, 1988),[7] and as mastery focused versus ability focused (Ames & Ames, 1984).[1] With a performance goal orientation , there is a concern for being judged as able, competent and an individual shows the evidence of ability by being successful , outperforming others , or by achieving success with little effort. A performance goal reflects a valuing of ability and normatively high performance outcomes; Whereas in case of a mastery goal, the importance is attached to developing new skills. The process of learning itself is valued, and the attainment of mastery is seen as dependent on effort. Achievement goal orientations are presumed to vary as a function of situational demands, as well as across the individuals (Maehr, 1984).[15] Research evidence has shown that situational demands can affect the salience of specific goals, which results in differential patterns of cognition, affect and performance. For example Ames and Archer (1988)[2] have found that students who perceived an emphasis on mastery goals in the classroom reported using more effective learning strategies, preferred challenging tasks, had a more positive attitude towards classroom learning, and had a stronger belief that success follows from one's effort. Likewise, students who perceived performance goals as salient tended to focus on their ability, evaluating their ability negatively and attributing failure to lack of efficiency. Their findings suggest that the classroom goal orientation may facilitate the maintenance of adaptive motivation patterns when mastery goals are salient and are adapted by students. Thus, it implies that the classroom learning with mastery approach can enrich the students' learning experiences and enhance their capacity to use long-term learning strategies and adopt motivational orientation for showing more realistic but challenging academic target/ goals.

In Indian organizational settings, Sahoo (2000)[22] has also found that satisfactions of salient needs are positively related to job involvement and work motivation. In another study (Sahoo & Rath, 2003)[23] on working and nonworking women's job and family involvement they have found that both group of participants considered interpersonal relationship as their salient need and needs like personal achievement and independent thought and action come up as nonsalient needs. Thus, their findings supported the need saliency model, which reaffirmed that involvement was significantly related to the satisfaction of salient needs and uncorrelated to the satisfaction of non-salient needs. Thus, motivation is determined by salient need satisfaction potential.

Most of the literature on academic involvement and motivation is primarily based on western studies, where the individual's personal achievements, autonomy, control, power are considered to be most important. But these western models often influenced by their individualistic philosophy and cultural values are quite inapplicable for pluralistic Indian society, where we believe in collaboration and teamwork. Rare attempts have been made to develop an indigenous model to measure these attributes in our society.

3. Conceptual Frameworks

Need Saliency

The construct of need saliency assumes that there is no fixed hierarchy of needs across several subsets of human population. At an empirical level, people attach greater priority to certain needs as compared to other needs. The saliency of needs in any individual is determined by his / her past socialization in a given culture and is constantly modified by present conditions. Moreover, Need saliency formulation posits the following two basic propositions:

1. Work involvement / motivation are significantly related to salient need satisfaction.

2. Work involvement / motivation are unrelated to non-salient need satisfaction. Individuals, for example, may be asked to indicate their priority ratings for a number of needs (let's say a list of 15 needs). Thus, needs rated first and second are regarded salient needs whereas the needs rated fourteenth and fifteenth are considered nonsalient needs.

One of the most prominent facts that have emerged from the rapid development of education system is the importance of higher education. There are, dynamic factors underlying education and students' motivation. The success of education system and higher education per se should focus more and more on the students as persons and on their motivation, which in turn depends on how well the higher educational resources are utilized. This acquires special significance in the context of Indian scenarios.

Student Engagement: Academic Behavior of Students

Student engagement has been defined as having three dimensions i) behavioral, ii) emotional, and iii) cognitive engagements (Bloom, 1956).[3] It is considered as having the attributes like emotional involvement, active participation and meaningful sense making (Harper & Quaye, 2009a).[10] More specifically it explains "participation in educationally effective practices, both inside and out-

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side the classroom, which leads to a range of measurable outcomes"(Kuh et al, 2007),[13] and " the extent to which students are engaging in activities that higher education research has shown to be linked with high quality learning outcomes"(Krause & Coates, 2008).[12] Coates (2007) [5] described engagement as "a broad construct intended to encompass salient academic as well as certain non-academic aspects of student experience, such as active and collaborative learning, participation in challenging academic activities, formative communication, involvement in enriching educational experiences, and a feeling of support from learning community".

4. Research Objectives

1. To assess both the salient and nonsalient needs of IIT Kharagpur (IITKGP, India) B.Tech. and M.Tech. Students.

2. To identify and measure the IITKGP students' engagements in various academic, co curricular activities and its impact on their performance outcomes and job placements.

3. To find out the existing positive parameters of academic involvements of IITKGP students in this institute and design a career path for them.

Hypotheses

H_1 IITKGP students would differ with regard to their salient and nonsalient needs.

H_2 IITKGP students would vary in their academic and cocurricular activities/engagements.

Operational Definition of Terms

1. Salient & Non-salient needs: Students' priorities in motivational factors of studying in this premier institute.

2. Knowledge-based economy: Knowledge is being considered as intellectual property or a source of financial capital in Indian economy.

3. Academic engagements: All kinds of curricular activities.

4. Performance outcomes: Academic achievement marks (CGPA), Campus job placement offers.

5. Method

Sample

The sample were exclusively collected from IIT Kharagpur , a premier technical institute in eastern India where students across the country got selected and joined on merit basis, through the national level joint entrance examination for Engineering and Science, the toughest examination in the country, known as IIT-JEE(Indian Institute of Technology-Joint Entrance in Engineering). In total Four Hundred Sixty-five (N=465) B.Tech. (Undergraduate) and M.Tech.(Masters) students of IIT Kharagpur from various engineering /science disciplines were randomly selected as the sample, from a total student population of Ten Thousand (Population=10,000) studying in Forty-four (44) Engineering, Science and Interdisciplinary subject disciplines; their age range were from 20+ to 27+ years, have got equal access to infrastructure facilities, academic, and all extra-curricular activities available in the campus. The sampling technique was purposive as it was drawn from the one institute (IIT Kharagpur, India). However, the student population of this institute was very diverse, and represented India's youngsters' major attributes. Normally, the higher education learners all across the country join this institute after going through a rigorous three-phase centralized entrance examination; thus the student population here represent the whole India like any other IITs.

Assessment Tool/s

1. Study Behaviour Questionnaire: This tool was developed and adapted by Prof. F.M. Sahoo & Dr. A. Mohanty from the original "Work Alienation" scale of Prof. R.N. Kanungo (1982)[11] for measuring the academic involvement of IIT Kharagpur students. There are six parts in this questionnaires such as 1) Part 1deals with salient factors in the study environment to be prioritized by each individual student according to his/her choice/perception;2)in Part 2 the students are asked to map their satisfaction/dissatisfaction on a 6 point rating scale in 16 academic factors along with the overall rating of study environment in the campue;3) Part 3 consisting of 12 items, requires the participants to think about the value/importance of their educational institution in relation to their life goals (in 7point rating scale); 4) Part 4 consists of 15 items where students are asked to evaluate their own study behaviour in a 6 point rating scale; 5) Part 5 is a graphic measure with 02 sets of circles representing one's study and one's individual self. The circles overlap in various degrees representing how one is involved in his/her study. The participant has to accurately depict his/her relationship by selecting the exact figure (intersecting circles). Similarly they have to identify the distance between themselves and their study desk in the figure which implies the relative importance of study in their life. By adding all the scores of these parts we could find the top 5 salient needs of students that have been fulfilled by this academic institution & their involvement in its academic activities.

2. Students' Feedback: Both the B.Tech. and M.Tech.

students' feedback/s were collected from Career Development Centre (CDC-the Career Counseling & Job Placement Cell) of IIT Kharagpur, regarding various issues related to academic achievement, placements, their success and failures.

3. Students' Academic Engagements and Co-curricular Activities: Besides regular classes and labs a list of students' other campus activities was collected for the research purpose which includes the following events:

1. "Technova" – Technical Paper Presentation
2. "Metallomania" –Poster making competition
3. "Roboladle" – Robotics event
4. "Virtual Reality" – Coding competition
5. Business(BIZQUIZ).
6. Metallurgical and Materials Engineering(METAQUIZ)
7. Engineering Quiz (THE ONE)
8. Online Photography Competition
9. Online Quiz
10. Megalith (Civil Engg.-12 items)
11. Spring fest (Socio- culture-fest-71 items)
12. Petro fiesta (Society of petroleum-12 items)
13. Great-step (Mining Engg. Geo-science & Engg.-12 items)
14. National Student Space Challenge (Space Tech. students-11items)
15. Bitwise (Computer Science & Engg. society -07 items)
16. Sky-fall Kshitij (National Level Mechanical Design-09 items)
17. Exhibitions-08
18. Workshops-10
19. Mega shows-02

Research Design

The present study adopted a qualitative descriptive research by using the students' need assessment tool, collecting the information through interviews and conducting surveys across the campus.

Data Collection and Analysis

In the 1st phase-IIT KGP students' salient and non salient needs were assessed by administering the 'Need Saliency' scale (developed and adopted by Prof. F.M.Sahoo and Dr.A.Mohanty in Indian context).

In the 2nd phase: IIT KGP students' academic engagements and co-curricular activities were identified; their performance outcomes in terms of CGPA (Credit Grade Point Average) scores and job placements were collected from the institute CDC (Career Development Centre- institute's career counseling & students' job/placement cell).

Results and Interpretation

Both the quantitative and qualitative analyses have been done to analyze the data.

The present authors used sum scores of the questionnaire for the data analysis as it deals with motivational attributes, which were implicit in nature; the questionnaire items were often overlapping with each other. Therefore, it is assumed that the use of sum/total scores would better represent the factor structure of the questionnaire (McNeish & Wolf, 2020).[16]

Major Findings

The age distribution of the sample and the reliability measure of instruments were reported initially. The result of frequency tabulation of salient needs shows gaining knowledge to be on the lead followed by brand name of the institution among sixteen different types of needs mentioned in the survey are presented in Table 1. The descriptive statistics of salient and non-salient needs were reported at Table 2. Frequency of salient need tabulation among male and females (Fig 1) show gaining knowledge to be the highest reported salient need by males and brand name of the institution to be the highest reported need by females. Chi-square test was conducted to assess the relation between gender and salient need types show no significant association, indicating that choice of salient need is not dependent on gender types.

Table 1 Age Distribution of the Sample Respondents

			Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	<=20	80	44.4	44.4	44.4
	2	21-21	54	30.0	30.0	74.4
	3	22+	46	25.6	25.6	100.0
	Total		180	100.0	100.0	

Table 2 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.496	.773	4

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Table 3 Summary of the Findings

Salient Need Factors	Frequency	Percent
Brand Name of the Institution	103	22.2
Collaborative learning	2	.4
Cordial Peer Relationship	10	2.2
Fair Assessment	2	.4
Freedom from Social Pressure	7	1.5
Gaining Knowledge	126	27.1
Healthy Interpersonal Contact	8	1.7
Individual Attention to Student	7	1.5
Interesting Course Work	68	14.6
Job Prospect	49	10.5
Multiskilling	13	2.8
Opportunity for Higher Studies	17	3.7
Professionally Competent Teachers	15	3.2
Sound Administrative Policy	5	1.1
Supportive Learning Environment	24	5.2
Well Planned Schedule	9	1.9
Total	465	100.0

Table 4 Descriptive Statistics on Salient and Non-salient need scores

		to age in 3 groups	Gender	Qualification	Salient Need Score	Non Salient Need Score	Total Score	Overall Score
N	Valid	180	180	180	180	180	180	180
	Missing	0	0	0	0	0	0	0
Mean		1.81			8.63	8.13	67.04	4.23
Std. Deviation		.817			2.484	2.045	11.444	1.195
Skewness		.362			-.832	-.182	-.349	-.668
Std. Error of Skewness		.181			.181	.181	.181	.181
Kurtosis		-1.412			.071	-.546	.114	.066
Std. Error of Kurtosis		.360			.360	.360	.360	.360
Minimum		1			2	3	32	1
Maximum		3			12	12	96	6

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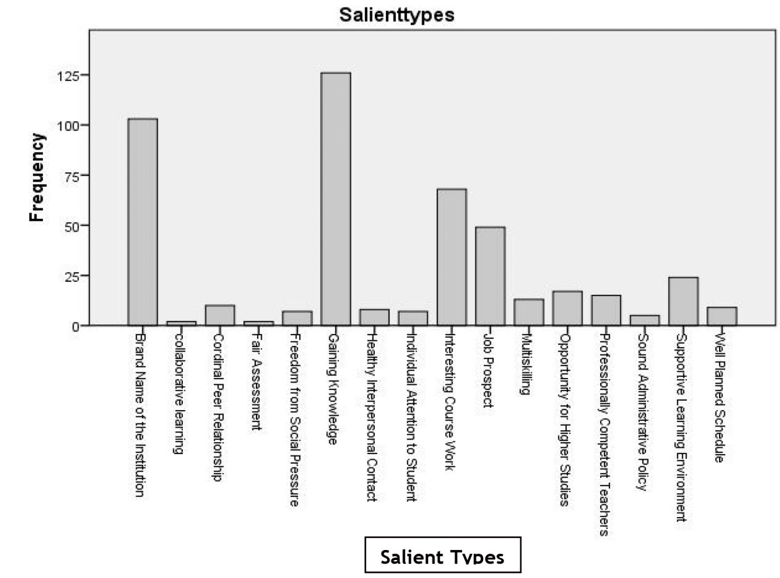
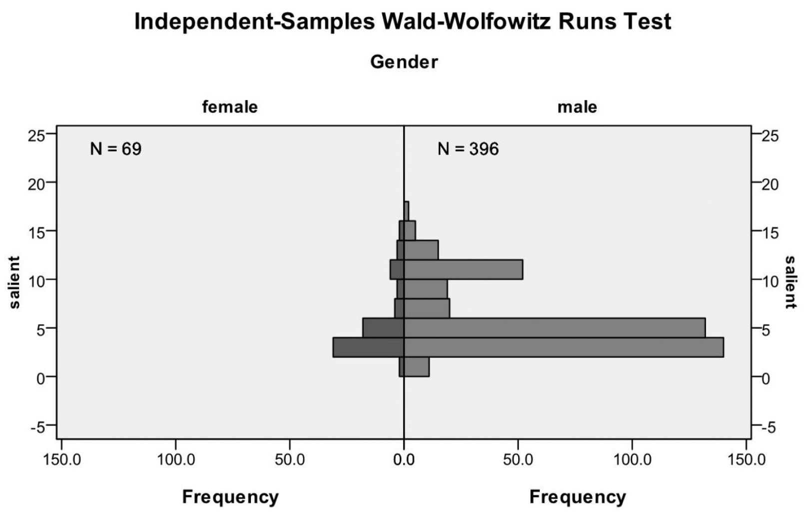


Fig 1. Salient Needs



Total N		465
Minimum Possible	Test Statistic[1]	14.000
	Standard Error	5.433
	Standardized Test Statistic	-19.240
	Asymptotic Sig. (2-sided test)	.000
Maximum Possible	Test Statistic[1]	139.000
	Standard Error	5.433
	Standardized Test Statistic	3.769
	Asymptotic Sig. (2-sided test)	1.000

[1] The test statistic is the number of runs.

1. There are 12 inter-group ties involving 441 records.

Fig 2. Gender Variation on Salient Needs

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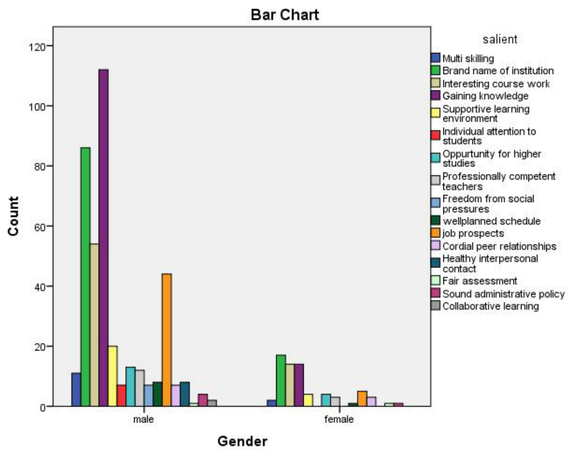


Fig. 3

Table 5 Summary of Findings

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of salient is the same across categories of Gender.	Independent-Samples Wald-Wolfowitz Runs Test	1.000[2]	Retain the null hypothesis.
2	The medians of salient are the same across categories of Gender.	Independent-Samples Median Test	.890	Retain the null hypothesis.
3	The range of salient is the same across categories of Gender.	Independent-Samples Moses Test of Extreme Reaction	.000[1]	Reject the null hypothesis.
4	The distribution of salient is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.377	Retain the null hypothesis.
5	The distribution of salient is the same across categories of Gender.	Independent-Samples Kolmogorov-Smirnov Test	.639	Retain the null hypothesis.
6	The distribution of salient is the same across categories of Gender.	Independent-Samples Kruskal-Wallis Test	.377	Retain the null hypothesis.
7	The distribution of salient is the same across categories of Gender.	Independent-Samples Jonckheere-Terpstra Test for Ordered Alternatives	.377	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

[1] Exact significance is displayed for this test.

[2] Computed using the maximum number of runs when breaking inter-group ti among the records.

The students' feedback and their performance outcomes (CGPA & Placements) are being discussed in the following section.

Table 6 Students' Feedback as Received in 2015

Summary of Students' Feedback Survey

No. of students placed in December (without PPO): 980

No. of students who filled the feedback : 826

No. of UG Students placed in December : 755

No. of UG Students who filled feedback : 630

No. of PG Students placed in December: 224

No. of PG Students who filled feedback : 196

Note : All statistics are based only on the number of students who were placed in December and filled the feedback form (i.e, 826) and the percentages are also calculated accordingly.

Table 7 Undergraduate Students' Preference/s & Actual Placements in Core Subjects

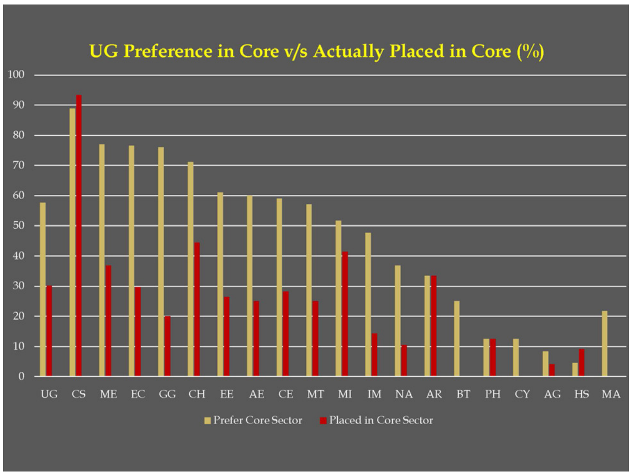


Table 8 Post-graduate Students' Preference/s & Actual Placements in Core Subjects

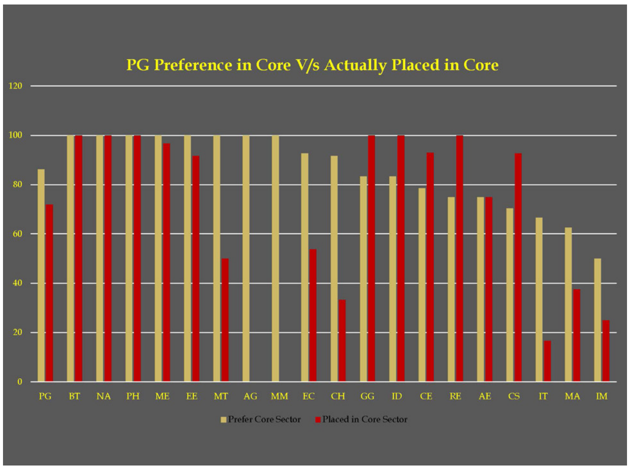


Table 9 Students' Perception about Hurdles of Placements

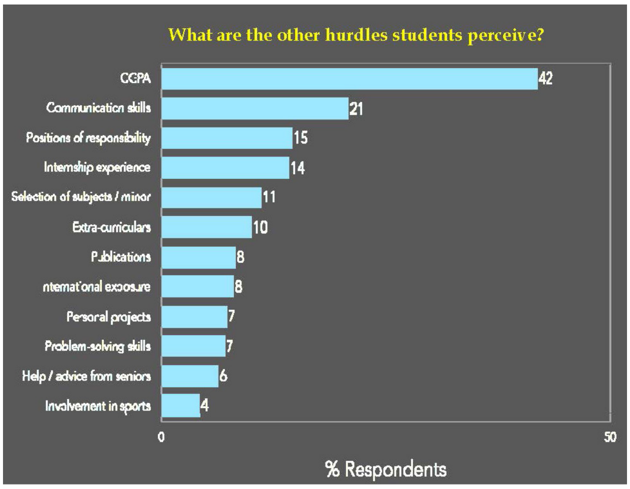


Table 10 Students' Perception of the Strength of CG-PA-Career Grade Point Average in Placements

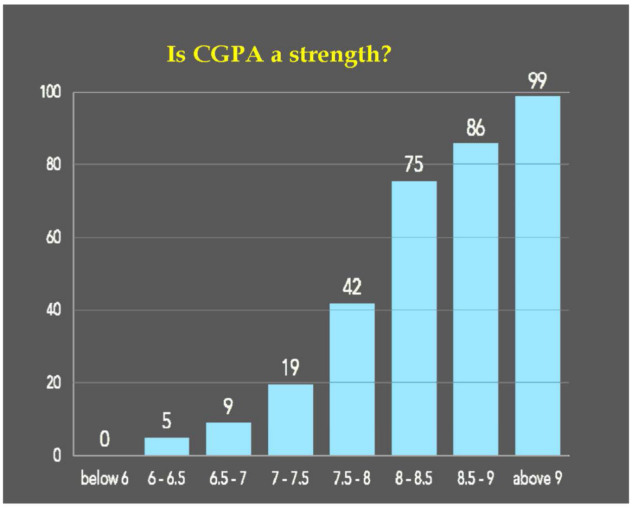


Table 11 Students' Perception of Low-CGPA as A Hurdle in Career Graph

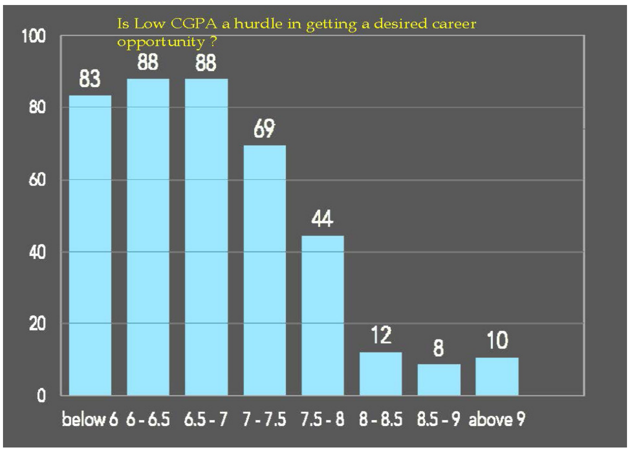
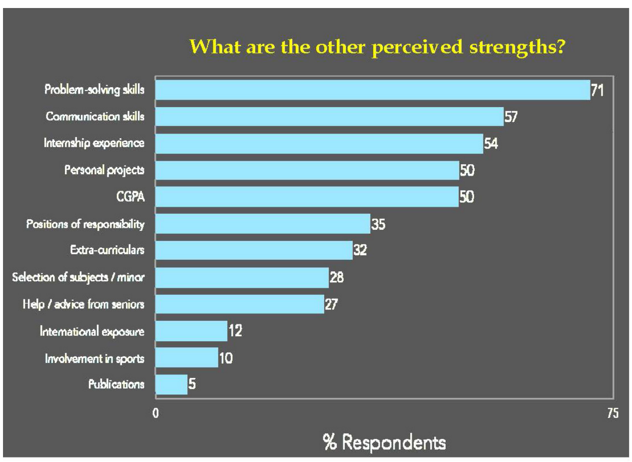


Table 12 Students' Perceived Strengths & Vital Factors of Job Placements



Interpretation

From the above mentioned data (2015) it is found that IITKGP students' top five salient needs are: a) gaining knowledge (27.1%), b) brand name of the institution (22.2%), c) interesting course work (14.6%), d) job prospects (10.5%), and e) supportive learning environment (5.2%), which revealed their potential motivational factors for joining this academic institution of higher learning.

Besides these, (according to 2015 Dec. placement data), the 'Career Development Center' (CDC) of IIT Kharagpur states that even though undergraduate (UG) students prefer to be placed/get a job in their core subjects, very few could actually get jobs in their core branch. Except few branches like Computer science, Aerospace engineering and Physics, the UG students are being placed in non-core sector jobs like IT/service sector. Out of total 58% students who aspire to work in core sectors only 30% UG students could get these. In case of postgraduate (PG) students, the situation is better; baring few branches like Agriculture, Mining and machines, and Chemistry students are well-placed in core sectors. However, almost 88% students reported that below 7.0 CGPA (academic score) is really a barrier/hurdle in getting their desired career goals/jobs; 99% students expressed that having CGPA above 9.0 is the greatest strength in achieving their career goals. When further asked about other potential hurdles in their career graph they gave the feedback about most vital factors i.e., CGPA (42% students agreed), communication skills (21%), position of responsibility like hall or gymkhana- executive body position (15%), internship experience (14%), selection of minor/elective subjects (11%) and extra-curricular activities (10%) matter most for their job placement. Moreover, they have added that their potential strengths (being the technical students of premier institute) are problem solving skills (71% students stated), communication skills (57%), internship experience (54%), personal projects, CGPA (both 50%) are the top 5 positive attributes.

Contrary to the above mentioned opinion/data, during the campus placement period (2015 Nov.-Dec.), when the multi-national companies like TCS, KLA Tencor, Lanxess India Pvt. Ltd., Sasken communication technology and Edgeverve systems Ltd. suggested to CDC, IIT Kharagpur for giving more focus on problem solving skills, core subject knowledge, effective communication skills and articulation of thoughts. In comparison to UG students the PG students, who normally are non-IIT B.Tech. students, need to develop in-depth knowledge in their core branches. Thus, it could be assessed that there are gaps among UG and PG students' academic standards/ performance; between what the student community

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assume them to be and what they actually have/possess. Therefore, a clear gap was evident between the employers' expectations and students' performance, employability skills.

6. Discussion and Conclusion

According to recent literature on global employment scenario (FICCI, 2016)[8] Indian job market has recently witnessed an evolution with the changes in demography, technology, and socio-economic factors leading towards frequent job hopping by youngsters and professionals. As the world is gradually moving toward emerging markets, a growing younger population (called as demographic dividend), increasing consumption and purchasing power have been observed in Indian middle class society, in addition to changing geopolitical landscape, global trade and upward talent mobility. The data shows that majority of Indian employees spend 2-5 years in their current tenures, whereas only 12% employees serve tenures exceeding 10 years in a single job position in India. The current employment scenario, underpinned by the fusion of technologies cutting across the physical, digital, and biological worlds has given rise to new skill requirements, job roles and specializations that did not exist in the past. Thus, the global job market has unfolded into newer spheres, especially into services allied industries, start-ups, e-commerce business, outsourcing etc. with evolving roles and skill requirements. Therefore, the new employment paradigm with new job roles mandates life-long skilling to boost industry-readiness, 21st century generic, professional, and sustainable competences that would govern the global employment outlook till 2030.Thus, the researchers felt the need to map these gaps accurately in IITKGP and fill up with proper career development programs, career guidance, counseling, and motivation training programs within the campus along with the regular academic programs. The CDC can possibly develop the 21st century employable skills among students for better placements and job opportunities.

As we are heading towards 2020 goal of creating skilled workforce to be fitted into global economy/job we have to systematically draw career pathways for our students in which CDC plays vital role in providing career services to foster/develop professional skills required by 21st century employers, society and global economy. Even though, students' career pathways are being influenced by number of factors like, parents, peers, faculty, diversity and quality of our academic programs, the academic institutions, universities, industries and policy makers must play active and collaborative role in making career pathways more transparent, inductive and constructive. The relationship between education and occupational aspirations is complex, and gets further complicated with ground realities. Given the placement data, employers' comments our CDC should start "career service programs" tailored to meet the specific needs of our students and match these with employers' requirements.

Career service program on campus

From the current job holders and alumnus of our institute we found that presently employees of MNCs face increasingly complex demands as part of their job. Besides required content/domain knowledge, critical skills such as professionalism and work ethics, oral and written communication skills, collaboration and team work, critical thinking and problem solving are consistently defined as vital to job success. Employers expect that technical students of premier institutes must/should bring value to their organizations and take interest in grooming them for future leadership positions. Therefore, every academic campus must make efforts to develop and communicate services and resources that are directly catering to the needs of professional/graduate students.

As one size model cannot fit into all situations, we recommend for multiple approaches/strategies for career pathways on campus:

1. Centralized CDC services: The career development center (CDC) along with students' affairs department can start centralized service to enable all students to use all resources and services already available in the campus. On campus recruitment, job fairs, self-assessment instruments, career counseling, expert talk, pre-placement training, internship starting from 2nd year onwards can be adapted to serve the needs of professional graduates. Moreover throughout the year the employers with diverse hiring needs can be in touch with the center for getting a heterogeneous pull of human resource from wide range of academic back grounds. The career counselor attached to the CDC must raise certain questions among the students to be asked by them to appraise their strengths, weaknesses, skills/competencies to be developed and opportunities available in the market. Example: what are my skills/interests and values, and how do these affect my career decisions? What career options are available to me, and how do I begin to explore and make sense of them? How do I conduct a job search? What is involved in that process? These issues should be a part of daily conversation and discussion in CDC, along with inviting career professional experts/consultants for accessing career information from a wide range of sources.

2. Academically based career services: The parent academic department (of students) can provide many benefits, not possible through centralized office (CDC). Depart-

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ments bring expertise in the discipline; provide mentoring to prepare them for placing placement interviews. The final year students would be able to ask them questions i.e. a) what, how, why should they prepare for a core company job? b) What must they know (domain knowledge + miscellaneous) before facing the core company? The respective core departments can prepare "career pathway institutional module" with specific objectives like: a) identifying core subjects from second year onwards and briefing their importance; b) awareness and preparation on the basic text books on the core subjects; c) motivating them to know about in-house expertise and projects that are done at departmental level; d) enforce that each student should know the details of the B.Tech/M.Tech projects being done and its application in various fields (i.e. social/interdisciplinary/research); e) encourage them to take internship related to core projects; f) insisting students to do SWOT (strength, weakness, opportunity and threat modules)analysis for self-appraisal in order to map their knowledge and competence required for a core company and how could they contribute to that company and add value; g) encouraging students to consult expert faculty depending on the company's visit to campus; h) even though the students have very good informal network with their seniors, the department should showcase their pass success stories, alumni network, resources available and ongoing project to attract students to core branches and core company placements/jobs.

3. Campus collaboration: In addition to these, career service pathways can be well integrated with other resources and centers in the campus i.e., alumni cell, entrepreneurship cell, innovation centers, gymkhana for organizing various events, activities, programs for not only showcasing students' talents but inviting potential corporate/industries and govt./MNC employers for partnership in different ventures from agriculture to aerospace, from renewable energy to mobile apps. Smart collaborations can stretch campus resources and provide a more coherent package of career related services for students.

4. Developmental approach: Moreover, our students' career issues must be placed in the context of other developmental and life issues they face such as financial and family issues, social adjustment and relationship issues etc. Hence faculty advisers, mentors and career service providers must be aware of these issues and how they bear on student's career decisions and preparations. Campus/institute must also develop resources and services like hospitals and counseling centers to deal with health/mental health, yoga clubs, indoor and outdoor games with coaches, meditation centers etc. to handle student life skill problems, stress, anxiety, depressions etc. Experts have also offered a framework for understanding the student experiences stages: entry level, engagement and exit level (Stewart, 1995;[25] Golde and Dore, 2001).[9] Each stage offers an explanation of typical features and challenges students face during their academic careers. Hence, students increasingly need support, whether pursuing academic or non-academic options in reaching their goals. The emotional issues of leaving the campus, not succeeding in an interview, not getting the jobs of their choice or having a new professional identity should not be ignored, but to be dealt with utmost care and concern.

Thus, by the end of a 4yr/5 yr. professional degree program, as students make transition to the professional world they should be able to answer some key questions: How do I employ the skills that I have developed? How do I define myself in relation to my chosen profession? How do others perceive me as a professional (Weidman, Twale, & Stein, 2001)?[28] Career service center can help students in finding their answers and realizing/experiencing their professional identities. Surveys across the globe confirmed the importance of faculty adviser in student career development as most students indicate that faculty members, career advice are far more than any other group of influencers. Careers encouraged by faculty appear to be closely aligned with the career interest of students. Mostly teaching/faculty and research positions are most endorsed careers by both student and faculty. Positions in industry, govt. and non-profit organizations are of interest to some students and are less often endorsed by faculty. Therefore, the institute/industry must build connections/networks with their past students, track career outcomes and job placement information for professional students, connect graduate/post graduate students with alumni network, broaden the focus of graduate education to include development of professional skills. Employers should also enhance and expand collaborative relationship with academia and make strategic investments in collaborative research, training, internship, consultancy as well as teaching programs through visiting faculty/ chair professor/student exchange programs. Moreover, our policy makers/educational administrators must create an advisory committee of leaders in business and graduate education to support work priorities; establish a professional plus program for graduate students on research assistance-ship and increase budget allocation for education and skill development programme/s all across the country.

With reference to the above discussion we hope and aspire to develop some core competencies, domain knowledge and career related soft skills among our youth. Some of these are: 1. communication and interpersonal skills, 2. critical and creative thinking, 3. personal

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effectiveness , 4.integrity and ethical conduct, 5. teaching competence, 6. societal and civic responsibilities, 7.leadership, 8.research management, 9. knowledge creation, translation, mobilization and sharing, 10.career management etc.. All these competencies would definitely help us in developing mass skilled workforce prepared and well suited for global economy. In this context the FICCI (Federation of Indian Chambers of Commerce & Industry) in 2016 reported that "Till 2020 the next wave in India's job market is expected to be driven by new pillars, including technological growth, government reforms and socio-political advancements which will lead the transformation of India's employment scenario, giving way to specialization in new technologies and skills; up to 2030, India will witness a similar impact on job scenario as globally." Subsequently, as a result of job markets' transformation our students would be finding it increasingly difficult to keep pace with the evolving skill requirements. Therefore, the technical and higher education institutions should focus on continuous learning and up- skilling to stay abreast with 21st century skills.

7. Conclusion

The rapid changes in the job market across the globe pose many challenges for higher education system in India to keep pace with industry requirements and students' aspirations. Therefore, the Indian higher education system has to transform its curricula, pedagogy, training toward continuous professional development and life-long learning to align itself with changing world. Presently, the technology-enabled MOOCS (NPTEL Online Courses) are the best channels for lifelong learning. A strong 'Academia-Industry' partnership programme could help Indian students to re-skill and up-skill their existing knowledge/capabilities through on-the-job training, peer-to-peer learning, mentoring, experiential learning, problem-based learning, group-based projects/assignments, deep learning issues, prolonged internships, student exchange programme/s with global elite universities etc. to stay updated and relevant in the global job market. Now-a-days the learners have more choices to learn at their own pace in a global set-up; the global ranking of the universities/higher education institutes is one such initiative to compete for brand name, funding sources, intellectual property, patents and global positioning. There is an urgent need for paradigm shift in Indian higher education system toward transformative education and sustainable competence development for a sustainable future.

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