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Disseminating Sustainable Development Education in English language through individuals learning capabilities and institutional infrastructural initiatives

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ABSTRACT

The significance of the knowledge acquisition and knowledge transfer of Sustainable Development Education increase when their level of integration in the daily routine of the individuals is being evaluated. The complexity further enhances when such education is being given to the students whose first language is not English, however the mode and medium of such knowledge transfer in the higher education institution is English. Therefore, the present study aims to explore the significance of the intrinsic and extrinsic enablers of the sustainable development knowledge acquisition and its integration in the daily routine of the students whose first language is not English and the said education is being delivered in English Language. Following the survey research design, the data was collected from 349 students in the Sustainable Development Education course in the Chinese higher education institution and the hypothesis were assessed through the application of Structural Equation Modelling. The results reported the significant associations between all of the intrinsic and extrinsic predictors with the creation variables. Based on the findings, it has been recommended the development of the content should be made in the more simple and easy manner that are easy to comprehend by the students having English as foreign language.

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1. Introduction

Sustainable development and the disseminating of its education, knowledge and learning is a process which requires the transfer of knowledge with the purpose of creating an awareness among the individuals regarding the safeguarding of economy, society and ecology (Edu et al. 2021; Ribeiro et al., 2021; Tvaronavičienė et al., 2021). In such process of knowledge transfer, the role of academic institutions is extremely important as it plays the role of the bridge between the resource person that is

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educationists or academicians and the receiver which are the individuals and students (Guerra et al., 2018). With an increase in the develop of the economics and development at the cost of the environment and society, the international bodies are seeking solutions by which the gradual raise in the temperature of the earth refer to as "Global Warming" can be controlled and countered (Sharif et al. 2020). For said purpose, a comprehensive level of awareness is the need of time which requires the participation of academic institutions especially, as they are focal point of development of education, knowledge and its respective transfer (Alshuwaikhat & Abubakar, 2008; Bai Gokarna et al., 2021; Ribeiro et al., 2021).

Since the worldwide propositions and guidelines that are devised for countering the level of global warming, that are accordingly being agreed by the countries are in English language that is vastly understandable by the majority of the nations, therefore its knowledge transfer among the diversified cross ethnic and cultural students are also vastly done in English language. Despite of the fact that the level of communication being done among the international higher education institutions is English, it remains a point of concern for the students who are not native speakers and hence requires careful consideration in respect of the content, learning material, personality and attributes of teachers and the development of other related illustrations and study materials (Asif et al., 2020; Koludrović & Mrsić, 2021). Similarly, in the international higher education institutions belongs to the country whose official or first language is not English, and the students enrolled in such university belongs to the different cross cultural, nationals and ethnic backgrounds, then the sustainable initiatives that being taken for the wellbeing of ecology, economic and society, need to be designed and promoted in English language so that they are easily penetrated across the members of the academic institutions (Asif et al., 2020; Ribeiro et al., 2021; Wang et al., 2021; Žnidarec Čučković, 2021).

The process of knowledge transfer is extremely crucial as it requires engagement of both intrinsic and extrinsic enablers which empowers and endows the individuals to have an efficient knowledge transfer (Mardones & Campos-Requena, 2021). Similarly, for an efficient transfer of knowledge and learning related to sustainable development, there is a need to have sound understandings of both intrinsic and extrinsic enablers through which the learning and knowledge is excelled (Ribeiro et al., 2021). For instance, in terms of extrinsic enablers, sustainable initiatives that are being taken within the institutions, which follows the philosophies and principles of Sustainable Goals proposed by United Nations, need not to be restricted to the subject content and lecturers that are being given within the closed class room settings, but should also be expanded on the awareness being provided outside the class room settings and the infrastructural changes that are also being made in accordance with the concepts of sustainable development (Freidenfelds et al., 2018; Ribeiro et al., 2021).

Intrinsically, the process of knowledge acquisition will become easy when the students are being enabled to have enough control over the designing, defining and arranging the study material and illustration of the education course (Chen & Yen, 2021). Similarly, when the students are capable enough to have self-learning then they are also more likely to acquire the knowledge with least possible guidance and

assistance (Geng et al. 2019). On the other hand, when the students are having high level of commitment, engagement and motivation regarding the acquisition of certain knowledge, learning and education, then they are more likely to have a sound and sophisticated knowledge acquisition (Tang et al., 2021).

Moreover, it should also be noted that for the knowledge acquisition, through which the awareness regarding the sustainable development education is being developed and created, and to have integration of such knowledge in the daily routine activities, both intrinsic and extrinsic forces play an important role (Ribeiro et al., 2021; Tang et al., 2021). Furthermore, when this knowledge is efficiently integrated with the individuals' daily routine activities, it will have huge impact in terms of resources preservation, energy consumption, environment wellbeing and societal welfare (Ribeiro et al., 2021). The significance of this knowledge acquisition and knowledge transfer increase when their level of integration is being evaluated among the students whose first language is not English, however the mode and medium of such knowledge transfer is English (Asif et al., 2020). Therefore, the present study aims to explore the significance of the intrinsic and extrinsic enablers of the sustainable development knowledge acquisition and its integration in the daily routine of the students whose first language is not English and the said education is being delivered in English Language.

The arrangement of the remaining research is that following sections discusses the proposition of the hypothesis based on the research objective, followed by the methodology and statistical estimations and results, whereas in the last the study is concluded and recommendations are accordingly proposed.

2. Literature review

2.1. Learner control, sustainable development knowledge and proactivity

Learner Control (LCN) has been explained as the perceived benefits that an individual assume to sustain when he or she has been given more control in terms of speed, pace and the rights and authority to design, arrange or rearrange the instructions and guidelines that is intended to be delivered during the knowledge transfer process of a particular course, training or lectures (Tang et al., 2021). Through this, the individual has been given more empowerment in terms of selecting the desired illustrations, case studies and other exemplary materials and methods, practices, procedures, arranging the pace and the length of the knowledge sessions in accordance with the individual cognitive and intellectual capabilities and needs (Chen & Yen, 2021). Educationists and academicians have urged to have sufficient LCN during the process of learning and knowledge transfer which enables an individual to adjust themselves in accordance with the change in the context, content and the learning environment and settings (Chang & Ho, 2009; Tang et al., 2021). In the context of students that are non-native English speakers, the basic communication being taught in English language serve as an enabling force which assist students in acquiring the knowledge especially in developing competency for learning sustainable and moral education (Asif et al., 2020). An understanding of the sustainable and responsible behavior is extremely crucial for individuals. Therefore, for the non-native English speakers, when the sustainable development education is being delivered in a simple, easy and

understandable language then it is more likely that it will not just develop their understandings and knowledge of it but also enables them with the integration of the such knowledge in their daily operations (Ribeiro et al., 2021; Tang et al., 2021). Hence it has been anticipated that:

H1: Having Learner's Control by the individual will enhance the level of Sustainable Development Knowledge

H2: Having Learner's Control by the individual will enhance the level of Sustainable Development Proactivity

2.2. Self-directed learning, sustainable development knowledge and proactivity

The importance of Self-Directed Learning (SDL) has been identified by the educationists and academicians since last century (see Dewey, 1916). It has been explained as the process by which students are being allowed, empowered and enabled to devise and ascertain their learning needs, define their objectives and goals, devise the strategies to operationalize them, and eventually assess the outcome through the said learning (Knowles, 1975). A student having high level of SDL is capable to search additional relevant material online and offline, whereas it furthers enables to expand their knowledge (Geng et al., 2019). In the situation where English is being taught as foreign language and other courses and trainings are being delivered in English language, then the students are more likely to comprehend the learning and understanding of the content that is being taught will all of its essence and substance (Asif et al., 2020; Tang et al., 2021). Similarly, when the education is related to sustainable development, which itself is extremely vast area and restricting a student to a particular course outline, may also lead the students to have selective learning which may also not be sufficient for future change and challenges (Ribeiro et al., 2021; Tang et al., 2021). Hence it is assumed that when the students are having the high level of SDL, they are more likely to grasp and comprehend more learning and knowledge which further enables to integrate such learning with the daily day-to-day operations. Hence it has been anticipated that:

H3: Having Self-Directed Learning by the individual will enhance the level of Sustainable Development Knowledge

H4: Having Self-Directed Learning by the individual will enhance the level of Sustainable Development Proactivity

2.3. Motivation for learning, sustainable development knowledge and proactivity

In the current situation, it is extremely important for the student to have intrinsic motivation as it enables them to learn, engaged, committed and eventually complete the learning, task, and education etc. The level of motivation has the capability to not just affect the individuals' beliefs, attitude, perceptions, success or evasion of failure (Lee & Pang, 2014), but also defines the propensity and capability of students' knowledge acquisition. Despite of the fact that motivation for learning is developed among the students through coaching, assisting, guiding, developing interest, evolving

enthusiasm and so on (Öqvist & Malmstrom, 2016), there is still need of further exploration of this phenomena (Lau & Ng, 2015; Tang et al., 2021). Especially, in the context of non-native of English students, having sufficient level of intrinsic motivation is extremely important for the students to remain committed and engaged with the knowledge transfer process (Asif et al., 2020). Additionally, in the context of delivering and transferring the knowledge regarding the Sustainable Development Education to the non-English native speakers, having sufficient level of intrinsic motivation can enable the students to expand their knowledge further whereas it also assist them to incorporate those learning within their daily activities (Ribeiro et al., 2021; Tang et al., 2021). Hence it has been anticipated that:

H5: Having Motivation for Learning by the individual will enhance the level of Sustainable Development Knowledge

H6: Having Motivation for Learning by the individual will enhance the level of Sustainable Development Proactivity

2.4. Sustainable development in class, sustainable development knowledge and proactivity

In today's scenario, an understanding of the sustainable and responsible behavior is extremely important which enables the individual to engage in the operations that are not just beneficial for the society but also for the environment (Najmi, Kanapathy & Aziz, 2021). Hence for said purpose, there is a need to have the development of such understanding through the knowledge transfer and learning which is made by the help if higher education institutions. In other words, apart from the advertisements, awareness and promotions campaigns regarding sustainability, the efficiency can be improved when such knowledge is formally transfer through colleges, institutes and universities (Ribeiro et al., 2021). Additionally, according to Lukman and Glavič (2007), the transfer of knowledge related to sustainable development within the class through lectures, illustrations, defining of principles and practices have reported to change the life styles of the individuals which is a need of the time. In the context of non-native English students, when such knowledge is transfer to the students belong to a diversified ethnic and cultural backgrounds in a language common to all, they are more likely to expand their knowledge base and the incorporation of such activities within their daily routine (Ribeiro et al., 2021; Tang et al., 2021). Hence it has been anticipated that:

H7: Having Sustainable Development Learning in Class to the individual will enhance the level of Sustainable Development Knowledge

H8: Having Sustainable Development Learning in Class to the individual will enhance the level of Sustainable Development Proactivity

2.5. Sustainable development outside class, sustainable development knowledge and proactivity

Sustainable development is a broader concept that not just can be taught within the premises and settings of a classroom but since it is all about the change and

improvement in the lifestyles of the individuals and society, therefore it is imperative that this need to be taught through the creation of the overall learning environment (Alshuwaikhat & Abubakar, 2008). Such learning environment also requires trainings, workshops, game shows, advertisements and promotions being done outside the settings of the closed class rooms (Ribeiro et al., 2021). Additionally, Velazquez et al. (2006) emphasized that the effectiveness of the Sustainable Development Education will be increase when it is being embedded across the campus of the higher education institution. Since the importance of the knowledge and awareness for safeguarding the society and environment has been highlighted by the number of researchers (Khan et al., 2019), therefore the sharing of the knowledge should not be bounded and limited within the class room settings (Ribeiro et al., 2021). In the cross cultural settings, the efficiency of the sustainable development education can be increased when the said knowledge is delivered in the common understandable knowledge which is English (Asif et al., 2020). Therefore, when such knowledge is transferred through English language, the students are more likely to expand their base of knowledge whereas it also enables them to integrate that learning within their daily routine. Hence it has been anticipated that:

H9: Having Sustainable Development Learning outside Class to the individual will enhance the level of Sustainable Development Knowledge

H10: Having Sustainable Development Learning outside Class to the individual will enhance the level of Sustainable Development Proactivity

2.6. Infrastructure for sustainable development, sustainable development knowledge and proactivity

The quality of education program being provided by a higher education institution can be gauged with the level of compliance that institution has, with the philosophies of the same education program. Similarly, for an institution to have knowledge transfer of the sustainable development also need to have high level of compliance along with the clear definition of the roadmap for the compliance and implementation of initiatives that follows the philosophies of sustainable development (Ribeiro et al., 2021; Velazquez et al., 2006). In fact according to Velazquez et al. (2006) there is a need to have coordination across the departments of the higher education institutions regarding the sustainable development initiatives being taken into the institution so that they are rightfully followed and implemented. In addition to this education, training and research being done within the institution, there is also a need to have feedback from the students which enables the institutions to have continuous improvement (Lukman & Glavič, 2007). According to Nejati and Nejati (2013), when the institution itself have high level of adherence to the sustainable development initiatives within their infrastructure, they are more likely to create higher level of awareness across the users of the campus including students, faculty members and staff. Similar initiatives was also urged by Tan et al. (2014) according to whom, the success of an institution is highly dependent to the sustainable initiatives being taken within infrastructure in addition to the educational programs, trainings and workshops. Hence in the context of non-native English students, when education of

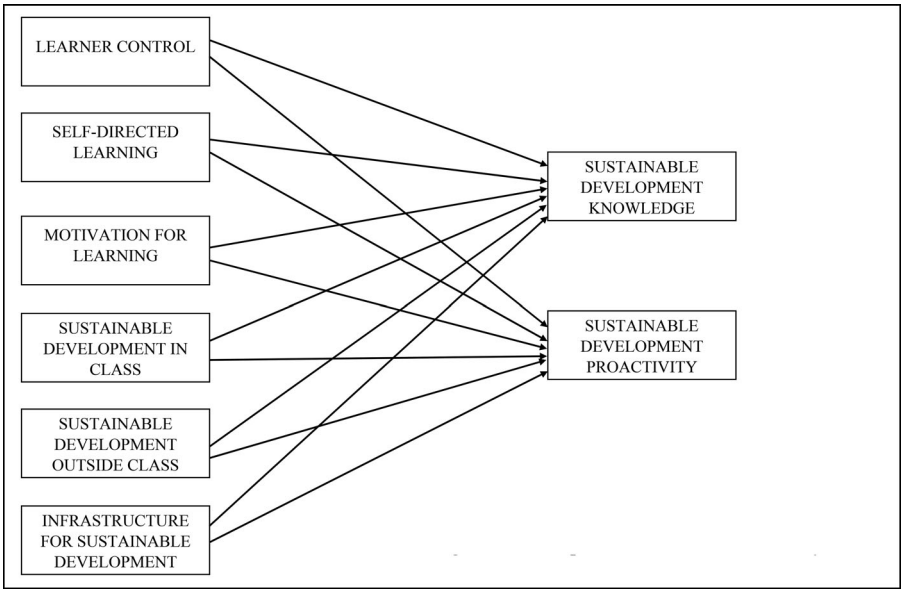

Figure 1. Conceptual framework of the study.
Source: authors construction.

sustainable development and its knowledge is transferred while the infrastructure itself have high compliance and adherence to the principles of sustainable development, to the students belong to a diversified ethnic and cultural backgrounds in a language common to all, they are more likely to expand their knowledge base and the incorporation of such activities within their daily routine (Ribeiro et al., 2021; Tang et al., 2021). Hence it has been anticipated that:

H11: Having Infrastructure of Sustainable Development by the institution will enhance the level of Sustainable Development Knowledge among the students

H12: Having Infrastructure of Sustainable Development by the institution will enhance the level of Sustainable Development Proactivity among the students

Based on the aforementioned discussion, it is evident that in order to have the delivery of sound knowledge and education of the Sustainable Development to the potential students, both intrinsic and extrinsic factors play a crucial role. A student not just need to have a high perceived control, focused and clear about the learning and also need to be highly motivated in order to have the understandings and knowledge related to Sustainable Development (Asif et al., 2020; Tang et al., 2021). On the other hand, the infrastructure of the institution through which the knowledge is being transferred can also play a crucial role in the process of knowledge transfer (Ribeiro et al., 2021). Hence a framework is being developed in accordance with the proposed hypothesis and is shown as Figure 1

3. Methodology

The study follows the quantitative research approach in which the survey research design was adopted precisely, for the purpose of assessing the associations among the

Table 1. Source of measures.

Constructs	Number of Items	Sources
LEARNER CONTROL	**7**	Tang et al., (2021)
SELF-DIRECTED LEARNING	**8**	Tang et al., (2021)
MOTIVATION FOR LEARNING	**8**	Tang et al., (2021)
SUSTAINABLE DEVELOPMENT IN CLASS	**4**	Ribeiro et al., (2021)
SUSTAINABLE DEVELOPMENT OUTSIDE CLASS	**5**	Ribeiro et al., (2021)
INFRASTRUCTURE FOR SUSTAINABLE DEVELOPMENT	**6**	Ribeiro et al., (2021)
SUSTAINABLE DEVELOPMENT KNOWLEDGE	**4**	Ribeiro et al., (2021)
SUSTAINABLE DEVELOPMENT PROACTIVITY	**6**	Ribeiro et al., (2021)

variables (discussed in the previous section). During the designing and operationalizing of this research, the guidelines discussed by Cooper et al. (2006) were followed. Additionally, the best practices in the survey research design, as discussed by Hulland et al. (2018) were corresponded. Moreover, since the current study is based on the responses of the students whose first language in not English but are enrolled in the course of Sustainable Development Education being taught in the English language, therefore as required in the survey research design, a questionnaire was developed and designed in which the measurements were adapted from the existing literature. All of the questions were gauged on the level of agreement on 5-point Likert scale. In this scale, "1 represents Strongly Disagree", "2 represents Disagree", "3 represents neither Disagree nor Agree", "4 represents Agree" and "5 represents Strongly Agree". The details of the studied phenomena and their respective sources are listed in Table 1.

Since the current study is focused on the students whose first language is not English but are enrolled in the course of Sustainable Development Education being taught in the English language, therefore the researchers ensured that the statements, words and phrases used in the questions are simple, unambiguous, clear and easy to comprehend. Hence, prior to addressing them to the respondents, its validity in terms of Face and Content was ensured by 10 Experts who have an expertise in linguistics and Sustainable Development Education subject. Through this, the complexity and ambiguity in the questions were eliminated as suggested and recommended by the experts.

After finalizing the measuring questions of the questionnaire, its layout is designed in a way that it is divided into two parts. The first part comprised of the questions to gauge the studied variables as listed in Table 1. The second part comprised of the questions that were asked to assess the demographic profile of the respondents. Moreover, since the study was focused on gauging the students' responses enrolled in the course of Sustainable Development Education, therefore students were approach during their class timings whereas they were given sufficient time to respond to the questions rightfully.

Around 500 questionnaire were circulated among the focused students. Since the data collection method was the interception method, therefore all 500 were accordingly responded. On these questionnaires, the process of data screening was applied. During the process of data screening, few questionnaires were found to have missing values, whereas some of the responses from the questionnaires were eliminated because of being identified as outliers including both univariate and multivariate. The process of data screening being done based on the discussions by Hair et al. (2010).

Table 2. Descriptive statistics.

		Frequency	Percent
Gender	Female	197	56%
	Male	152	44%
	Total	349	100%
		Frequency	Percent
Age	20-30 years	181	52%
	31-40 years	98	28%
	41 years and Above	70	20%
	Total	349	100%
		Frequency	Percent
Program Enrolled	Undergraduate	134	38%
	Graduate	128	37%
	Post Graduate	64	18%
	Others	23	7%
	Total	349	100%

Source: Authors Estimation.

Additionally, the assessment of Common Method Variances (CMV) was ensured as it comprised of the unwanted methodological variances which arise especially in the quantitative studies precisely involving the survey methodology and during the data collection phase (Podsakoff et al., 2003). Therefore, both procedural and statistical remedies as elaborated by Podsakoff et al. (2012) were followed. According to the Podsakoff et al. (2012), the procedural remedies are the possible solutions that need to be incorporated during the designing of the research and is carefully considered in the development of the questionnaire and during the data collection phase. These were accordingly followed and was taken care. For statistical remedies, the Harman's (1967) single factor test was employed as discussed by Mehmood and Najmi. The outcome generated reveal the absence of any possibility of CMV. Additionally, the Full Collinearity Assessment as recommended by Kock (2015) was followed, which complements the outcome of the earlier test and validates the absence of CMV. The final demographics of the respondents after the process of data screening are listed in Table 2.

4. Statistical estimations and results

After meeting all of the pre-requisites related to the quality of the data, the application of Partial Least Square-Structural Equation Modelling (PLS-SEM) was made, which is discussed in this section in greater detail. The selection of PLS-SEM is made because of its robustness and explanation of more variation even when the framework and model of the research is complex Hair et al. (2019). Moreover, for the application of PLS-SEM, the SmartPLS software was utilized which is developed by Ringle et al. (2015). During the process of the statistical estimations, the guidelines discussed by Hair et al. (2016), which involves a two-step approach including assessment of measurement model and the assessment of structural model. These assessments are discussed in the following sections.

4.1. Assessment of measurement model

This step involves assessment of the associations of the measuring items with the latent variables which is also referred to Outer Model. These associations are further

categorized into two. Firstly, the level of association that the measuring items of a construct possess with their own respective construct, which is also referred to as convergent validity (Mehmood & Najmi, 2017). Secondly, the level of association that the measuring items of a construct possess with the measuring items of other constructs and forced them to form different latent constructs eventually (Mehmood & Najmi, 2017).

Considering the evaluation of Convergent validity, Hair et al. (2016) has listed three criteria. These includes factor loadings, which represents the variation explained of a measuring item which should exceeds the limit of 0.7. The factor loadings listed in Table 3 clearly shows that the threshold stated by Hair et al. (2016) regarding factor loadings is met. The other criteria is the level of internal consistency which is commonly referred to as reliability. This criteria is assessed by two measures namely Cronbach's Alpha and Composite Reliability which should exceeds the limit of 0.7. The values of Cronbach's Alpha and Composite Reliability listed in Table 3 clearly shows that the threshold stated by Hair et al. (2016) is met. The last criteria through which the convergent validity is assessed is referred to as "Average Variance Extracted" (AVE) which should exceeds the limit of 0.5. The values of AVE listed in Table 3 clearly shows that the threshold stated by Hair et al. (2016) is met.

The assessment of Discriminant Validity is being done by three criteria namely Cross loadings, "Fornell-Larcker criterion (1981)" and "Heterotrait-Monotrait ratio of correlations" (HTMT). Precisely, in the cross loadings, the variance explained of a measuring items against their respective construct and the other constructs are being evaluated. Moreover, the variance against the respective construct should be higher than the other construct whereas according to Gefen and Straub (2005), the difference should be far larger than the value of 0.1. The values of Cross loadings listed in Table 4 clearly shows that the threshold stated by Gefen and Straub (2005) is met.

The other measure by which the level of Discriminant Validity is assessed is the "Fornell-Larcker criterion (1981)". As per this criteria, the values that represents the correlations among the construct should not be too much high whereas the square root of AVE of a construct should be larger than the correlations values of a construct with all of the studied other constructs. In Table 5, the value which are positioned at the diagonal line are actually the square root of AVE of a construct whereas the values other than the diagonal line are the correlations of a construct with the other constructs. The values listed in Table 5 clearly shows that the threshold stated by "Fornell-Larcker criterion (1981)" is met.

The last measure by which the level of Discriminant Validity is assessed is the "Heterotrait-Monotrait ratio of correlations" (HTMT). It is a criteria which is newly proposed by Henseler et al. (2015) and since its propositions has been used in number of studies (Mehmood & Najmi, 2017). The threshold of this criteria as proposed by Henseler et al. (2015) is 0.85, whereas any value exceeding 1 should not be accepted. The values listed in Table 6 clearly shows that the threshold stated of HTMT is met.

4.2. Assessment of structural model

This is the second step as discussed by Hair et al. (2016) which explains the level of associations of the predictor(s) with the criterion variable(s), also referred to as Inner

Table 3. Measurement model results.

Variables	Items	Factor Loadings	Cronbach's Alpha	Composite Reliability	AVE
LEARNER CONTROL	LCN1	0.734	0.755	0.710	0.569
	LCN2	0.707			
	LCN3	0.753			
	LCN4	0.739			
	LCN5	0.797			
	LCN6	0.742			
	LCN7	0.728			
SELF-DIRECTED LEARNING	SDL1	0.762	0.745	0.729	0.514
	SDL2	0.713			
	SDL3	0.715			
	SDL4	0.762			
	SDL5	0.703			
	SDL6	0.792			
	SDL7	0.757			
	SDL8	0.730			
MOTIVATION FOR LEARNING	MOT1	0.743	0.754	0.704	0.544
	MOT2	0.775			
	MOT3	0.724			
	MOT4	0.771			
	MOT5	0.704			
	MOT6	0.789			
	MOT7	0.721			
	MOT8	0.725			
SUSTAINABLE DEVELOPMENT IN CLASS	SDIC1	0.779	0.776	0.744	0.513
	SDIC2	0.781			
	SDIC3	0.796			
	SDIC4	0.772			
SUSTAINABLE DEVELOPMENT OUTSIDE CLASS	SDOC1	0.794	0.721	0.750	0.502
	SDOC2	0.754			
	SDOC3	0.771			
	SDOC4	0.710			
	SDOC5	0.702			
INFRASTRUCTURE FOR SUSTAINABLE DEVELOPMENT	INF1	0.752	0.773	0.719	0.614
	INF2	0.741			
	INF3	0.728			
	INF4	0.749			
	INF5	0.719			
	INF6	0.747			
SUSTAINABLE DEVELOPMENT KNOWLEDGE	KNW1	0.701	0.775	0.749	0.526
	KNW2	0.751			
	KNW3	0.724			
	KNW4	0.783			
SUSTAINABLE DEVELOPMENT PROACTIVITY	PRO1	0.742	0.739	0.729	0.606
	PRO2	0.777			
	PRO3	0.718			
	PRO4	0.707			
	PRO5	0.721			
	PRO6	0.752			

Source: Authors Estimation.

Model. In this step, the model is assessed on the basis of its level of relevancy and accuracy of the predictions that predictors explains in the criterion variable. These are further assessed by two measures namely "coefficient of determination" represented by R-square and "cross-validated redundancy" represented by Q-square which

Table 4. Results of loadings and cross loadings.

Variable	LCN	SDL	MOT	SDIC	SDOC	INF	KNW	PRO
LEARNER CONTROL	**0.734**	0.415	0.403	0.321	0.410	0.318	0.441	0.378
	0.707	0.321	0.445	0.326	0.412	0.438	0.324	0.312
	0.753	0.370	0.380	0.379	0.373	0.354	0.342	0.296
	0.739	0.434	0.292	0.439	0.391	0.388	0.366	0.388
	0.797	0.440	0.407	0.405	0.423	0.368	0.370	0.438
	0.742	0.448	0.393	0.389	0.430	0.339	0.296	0.422
	0.728	0.440	0.416	0.331	0.442	0.350	0.392	0.385
SELF-DIRECTED LEARNING	0.317	**0.762**	0.356	0.399	0.335	0.322	0.306	0.303
	0.321	**0.713**	0.365	0.367	0.315	0.324	0.436	0.363
	0.398	**0.715**	0.408	0.424	0.429	0.434	0.406	0.365
	0.384	**0.762**	0.317	0.398	0.443	0.301	0.357	0.437
	0.374	**0.703**	0.291	0.358	0.331	0.359	0.319	0.403
	0.344	**0.792**	0.309	0.415	0.299	0.331	0.433	0.379
	0.310	**0.757**	0.353	0.349	0.322	0.396	0.368	0.348
	0.379	**0.730**	0.430	0.299	0.372	0.316	0.384	0.441
MOTIVATION FOR LEARNING	0.385	0.295	**0.743**	0.412	0.392	0.402	0.293	0.404
	0.329	0.401	**0.775**	0.399	0.386	0.421	0.344	0.350
	0.371	0.319	**0.724**	0.392	0.328	0.442	0.342	0.442
	0.324	0.410	**0.771**	0.375	0.320	0.355	0.294	0.363
	0.308	0.316	**0.704**	0.410	0.328	0.392	0.366	0.299
	0.398	0.439	**0.789**	0.295	0.413	0.309	0.350	0.353
	0.315	0.418	**0.721**	0.295	0.380	0.440	0.323	0.342
	0.325	0.342	**0.725**	0.443	0.386	0.339	0.364	0.318
SUSTAINABLE DEVELOPMENT IN CLASS	0.310	0.320	0.368	**0.779**	0.383	0.420	0.373	0.301
	0.313	0.353	0.349	**0.781**	0.332	0.386	0.358	0.410
	0.388	0.373	0.358	**0.796**	0.375	0.308	0.363	0.424
	0.382	0.297	0.404	**0.772**	0.307	0.441	0.366	0.444
SUSTAINABLE DEVELOPMENT OUTSIDE CLASS	0.324	0.340	0.391	0.372	**0.794**	0.337	0.344	0.305
	0.343	0.419	0.311	0.426	**0.754**	0.367	0.326	0.391
	0.430	0.314	0.332	0.331	**0.771**	0.303	0.294	0.435
	0.303	0.444	0.341	0.430	**0.710**	0.426	0.430	0.353
	0.329	0.353	0.359	0.361	**0.702**	0.395	0.392	0.409
INFRASTRUCTURE FOR SUSTAINABLE DEVELOPMENT	0.357	0.374	0.450	0.434	0.326	**0.752**	0.333	0.393
	0.337	0.382	0.412	0.317	0.422	**0.741**	0.291	0.426
	0.329	0.384	0.343	0.414	0.307	**0.728**	0.417	0.387
	0.346	0.298	0.348	0.361	0.393	**0.749**	0.438	0.354
	0.348	0.317	0.321	0.395	0.365	**0.719**	0.411	0.394
	0.291	0.313	0.421	0.417	0.402	**0.747**	0.387	0.361
SUSTAINABLE DEVELOPMENT KNOWLEDGE	0.343	0.369	0.443	0.424	0.307	0.331	**0.701**	0.343
	0.338	0.389	0.381	0.329	0.322	0.344	**0.751**	0.343
	0.436	0.315	0.444	0.422	0.413	0.445	**0.724**	0.315
	0.422	0.380	0.386	0.416	0.374	0.346	**0.783**	0.353
SUSTAINABLE DEVELOPMENT PROACTIVITY	0.363	0.352	0.306	0.399	0.330	0.322	0.313	**0.742**
	0.365	0.382	0.412	0.345	0.362	0.343	0.347	**0.777**
	0.406	0.340	0.381	0.357	0.372	0.427	0.324	**0.718**
	0.341	0.380	0.444	0.428	0.363	0.370	0.346	**0.707**
	0.290	0.424	0.334	0.417	0.368	0.383	0.349	**0.721**
	0.447	0.376	0.388	0.342	0.311	0.444	0.383	**0.752**

Source: Authors Estimation.

is gauged through the Stone Geisser's cross-validated redundancy. Precisely in assessing the values of R-Square, the threshold assess by Cohen (1988) according to which the values between 0.2 to 0.25 are considered as weak to moderate whereas when it exceeds 0.25 it is termed as substantial. On the other hand, for Q-square, any value that is greater than 0 is acceptable (Hair et al., 2016). The assessment of level of relevancy and accuracy of the predictions through R-square and Q-square are listed in Table 7.

Table 5. Discriminant validity Fornell-Larcker criterion.

	LCN	SDL	MOT	SDIC	SDOC	INF	KNW	PRO
LCN	**0.754**							
SDL	0.498	**0.717**						
MOT	0.382	0.372	**0.738**					
SDIC	0.524	0.494	0.394	**0.716**				
SDOC	0.506	0.428	0.354	0.372	**0.708**			
INF	0.490	0.358	0.488	0.355	0.502	**0.784**		
KNW	0.541	0.438	0.377	0.474	0.536	0.532	**0.725**	
PRO	0.503	0.384	0.453	0.434	0.386	0.407	0.456	**0.779**

Source: Authors Estimation.

Table 6. Results of HTMT ratio of correlations.

	LCN	SDL	MOT	SDIC	SDOC	INF	KNW	PRO
LCN								
SDL	0.571							
MOT	0.565	0.568						
SDIC	0.747	0.756	0.794					
SDOC	0.597	0.640	0.678	0.741				
INF	0.627	0.647	0.698	0.785	0.710			
KNW	0.706	0.644	0.742	0.787	0.603	0.680		
PRO	0.611	0.560	0.569	0.688	0.631	0.594	0.674	

Source: Authors Estimation.

Table 7. Predictive power of construct.

	R-Square	Q-Square
KNW	0.201	0.138
PRO	0.197	0.121

Source: Authors Estimation.

4.3. Hypothesis testing

In this step, the hypotheses which are proposed in Section 2, in accordance with the objective of the current study are being assessed. As per the statements of the hypotheses, the level of impact, its nature and significance is assessed of a predictor variable on the criterion variable. Firstly, the associations considering the Sustainable Development Knowledge which is denoted by KNW, as criterion variable is assessed. Learner Control which is denoted by LCN, is found to have a positive impact on KNW ($\beta = 0.194,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of LCN will tends to improve the KNW respectively. In other words, when the students despite of being a non-native English speaker, are intrinsically committed to learn Sustainable Development Education in English language, and their self-commitment excels in terms of their knowledge acquisition, exploration of relevant knowledge within the said course and self-awareness about his/her own sense of learning, it eventually enables the individual further with the process of acquiring knowledge, education and learning related to the Sustainable Development course being taught in English language.

Moreover, for self-directed learning which is denoted by SDL, it, is found to have a positive impact on KNW ($\beta = 0.275,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of SDL will tends to improve the KNW respectively. In other words, when the students despite of

being a non-native English speaker, are intrinsically committed to learn Sustainable Development Education in English language, and their self-commitment excels in terms of making himself or herself learned by own, seeking solutions of the possible problems, and finding out the best possible answers to queries by own, it eventually enables the individual further with the process of acquiring knowledge, education and learning related to the Sustainable Development course being taught in English language. Furthermore, for motivation for learning which is denoted by MOT, it is found to have a positive impact on KNW ($\beta = 0.241,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of MOT will tends to improve the KNW respectively. In other words, when the students despite of being a non-native English speaker, are intrinsically motivated and committed to learn Sustainable Development Education in English language, and their self-commitment excels in terms of their competency, self-striving, interest and connectivity with the process of knowledge acquisition, it eventually enables the individual further with the process of acquiring knowledge, education and learning related to the Sustainable Development course being taught in English language.

The other three predictor variables are extrinsic to individual in nature. Considering sustainable development in class which is denoted by SDIC, it is found to have a positive impact on KNW ($\beta = 0.152,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of SDIC will tends to improve the KNW respectively. In other words, when the students despite of being a non-native English speaker, are being taught about Sustainable Development Education in English language, and their self-commitment excels not just with the knowledge, learning and education that is being taught itself but the following of the principles of the Sustainable Development within the premises of the classrooms, it eventually enables the individual further with the process of acquiring knowledge, education and learning related to the Sustainable Development course being taught in English language. Similarly, considering the sustainable development outside class which is denoted by SDOC, it is found to have a positive impact on KNW ($\beta = 0.250,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of SDOC will tends to improve the KNW respectively. In other words, when the students despite of being a non-native English speaker, are being taught about Sustainable Development Education in English language, and their self-commitment excels not just with the knowledge, learning and education that is being taught itself but the following of the principles of the Sustainable Development outside the premises of the classrooms, through promotion of extracurricular activities that encourage the sustainable development, it eventually enables the individual further with the process of acquiring knowledge, education and learning related to the Sustainable Development course being taught in English language. Likewise, considering the Infrastructure for sustainable development which is denoted by INF, it is found to have a positive impact on KNW ($\beta = 0.274,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of INF will tends to improve the KNW respectively. In other words, when the students despite of being a non-native English speaker, are being taught about Sustainable Development Education in English

Table 8. Results of path coefficients.

Hypothesized Path	Path Coefficient	C.R	P-Value	Remarks
KNW ← LCN	0.194	7.527	0.000	Supported
KNW ← SDL	0.275	7.715	0.000	Supported
KNW ← MOT	0.241	7.437	0.000	Supported
KNW ← SDIC	0.152	8.534	0.000	Supported
KNW ← SDOC	0.250	7.916	0.000	Supported
KNW ← INF	0.274	8.041	0.000	Supported
PRO ← LCN	0.268	6.331	0.000	Supported
PRO ← SDL	0.248	8.485	0.000	Supported
PRO ← MOT	0.154	7.673	0.000	Supported
PRO ← SDIC	0.183	7.238	0.000	Supported
PRO ← SDOC	0.293	6.313	0.000	Supported
PRO ← INF	0.332	6.481	0.000	Supported

Note: Level of Significance (5% i.e. 0.050).
Source: Authors' Estimation.

language, and their self-commitment excels not just with the knowledge, learning and education that is being taught itself but the following of the principles of the Sustainable Development in the institution, through promotion of green initiatives, preservation of natural habitat, improving the efficiency of energy consumption and so on, it eventually enables the individual further with the process of acquiring knowledge, education and learning related to the Sustainable Development course being taught in English language. The assessment of the impacts of the predictors on KNW are listed in Table 8.

Secondly, the associations considering the Sustainable Development Proactivity which is denoted by PRO, as criterion variable is assessed. Learner Control which is denoted by LCN, is found to have a positive impact on PRO ($\beta = 0.268,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of LCN will tends to improve the PRO respectively. In other words, when the students despite of being a non-native English speaker, are intrinsically committed to learn Sustainable Development Education in English language, and their self-commitment excels in terms of their knowledge acquisition, exploration of relevant knowledge within the said course and self-awareness about his/her own sense of learning, it eventually enables the individual proactivity further with their daily operations in which he/she takes care of the sustainability principles while disposing waste, consuming energy, preserving resources and so on, despite the Sustainable Development course being taught in English language.

Moreover, for self-directed learning which is denoted by SDL, it, is found to have a positive impact on PRO ($\beta = 0.248,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of SDL will tends to improve the PRO respectively. In other words, when the students despite of being a non-native English speaker, are intrinsically committed to learn Sustainable Development Education in English language, and their self-commitment excels in terms of making himself or herself learned by own, seeking solutions of the possible problems, and finding out the best possible answers to queries by own, it eventually enables the individual proactivity further with their daily operations in which he/she takes care of the sustainability principles while disposing waste, consuming energy, preserving resources and so on, despite the Sustainable Development course being taught in English language.

Furthermore, for motivation for learning which is denoted by MOT, it is found to have a positive impact on PRO ($\beta = 0.154,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of MOT will tends to improve the PRO respectively. In other words, when the students despite of being a non-native English speaker, are intrinsically motivated and committed to learn Sustainable Development Education in English language, and their self-commitment excels in terms of their competency, self-striving, interest and connectivity with the process of knowledge acquisition, it eventually enables the individual proactivity further with their daily operations in which he/she takes care of the sustainability principles while disposing waste, consuming energy, preserving resources and so on, despite the Sustainable Development course being taught in English language.

The other three predictor variables are extrinsic to individual in nature. Considering sustainable development in class which is denoted by SDIC, it is found to have a positive impact on PRO ($\beta = 0.183,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of SDIC will tends to improve the PRO respectively. In other words, when the students despite of being a non-native English speaker, are being taught about Sustainable Development Education in English language, and their self-commitment excels not just with the knowledge, learning and education that is being taught itself but the following of the principles of the Sustainable Development within the premises of the classrooms, it eventually enables the individual proactivity further with their daily operations in which he/she takes care of the sustainability principles while disposing waste, consuming energy, preserving resources and so on, despite the Sustainable Development course being taught in English language.

Similarly, considering the sustainable development outside class which is denoted by SDOC, it is found to have a positive impact on PRO ($\beta = 0.293,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of SDOC will tends to improve the PRO respectively. In other words, when the students despite of being a non-native English speaker, are being taught about Sustainable Development Education in English language, and their self-commitment excels not just with the knowledge, learning and education that is being taught itself but the following of the principles of the Sustainable Development outside the premises of the classrooms, through promotion of extracurricular activities that encourage the sustainable development, it eventually enables the individual proactivity further with their daily operations in which he/she takes care of the sustainability principles while disposing waste, consuming energy, preserving resources and so on, despite the Sustainable Development course being taught in English language.

Likewise, considering the Infrastructure for sustainable development which is denoted by INF, it is found to have a positive impact on PRO ($\beta = 0.332,\ p < 0.01$), which is significant statistically at 1% level of significance. This represents that an increment in the level of INF will tends to improve the PRO respectively. In other words, when the students despite of being a non-native English speaker, are being taught about Sustainable Development Education in English language, and their self-commitment excels not just with the knowledge, learning and education that is being taught itself but the following of the principles of the Sustainable Development in the

institution, through promotion of green initiatives, preservation of natural habitat, improving the efficiency of energy consumption and so on, it eventually enables the individual proactivity further with their daily operations in which he/she takes care of the sustainability principles while disposing waste, consuming energy, preserving resources and so on, despite the Sustainable Development course being taught in English language. The assessment of the impacts of the predictors on PRO are listed in Table 8.

5. Conclusion and recommendations

The process of knowledge acquisition and its transfer is extremely crucial for both institutions and the students especially in a foreign language. The situation can get more complex when the knowledge and learning is related to the sustainable development education which itself is an evolving area, whereas it is being taught to the students whose first language is not English and the majority of the universal and international propositions and guidelines are being developed, designed and formulated in the English language. Hence to further explore this complexity and to identify the possible solutions to such problem, the present study is conducted in which three intrinsic and three extrinsic enablers are identified from the literature and their associations are further evaluated on the knowledge acquisition and its integration in the daily routine of the individuals enrolled in such education program. Through the application of PLS-SEM, the results reported the significant association among all of the identified enablers with the knowledge acquisition and its integration in the daily routine of the individuals.

5.1. Conceptual contribution

Based on the findings, the current study is an attempt to make various theoretical contributions. Firstly, it explore the role of intrinsic factor which enables the students to gain and sustain the knowledge especially when it is delivered in the language not native to them. Among the several intrinsic factors, the current study explores the three which are learner control, self-directed learning and motivation for learning. In addition to this, the current study also urge that through the efficient integration of the extrinsic factors the process of transfer of knowledge can be improved. Among those extrinsic, the current study explores the utilization and delivering the sustainable development in class, outside class and through the practices being followed by the institution within their premises and infrastructure. When both of the intrinsic and extrinsic factors are efficiently integrated, there is a highest probability that knowledge transfer process will become easy and more productive.

5.2. Practical implications

Based on the findings, there are multiple recommendations which the present study offers. Firstly, the content, study material and illustrations need to be developed in user friendly manner that are easy to comprehend for the students as they are being

taught in the language foreign to them. Secondly, there is a need to have sound level of assessment of the students to gauge the level of knowledge acquisition and its integration in the daily routine of them. Thirdly, the higher education institutions to develop an environment of collaborative learning through which the knowledge acquisition and its transfer is ensured. Additionally, there is a need to have more sustainable initiatives that are not just bounded to the class room settings, rather should be extended outside the class room whereas the infrastructure of such institutions also need to have high level of adherence and compliance to the philosophies of sustainable development education.

5.3. Limitations and directions for future research

For the future researches, based on the limitations of the current study it is proposed to have a comparative study among the students who are native English speaker and non-native English speaker so that the level of comprehension of the sustainable development education is evaluated. Additionally, the level of anxiety that the students perceive while dealing with the things not familiar to them is a phenomena that need to be explored. Moreover, the current study only explores the relationships that are linear hence the non-linear association need to be explored through the estimations techniques that are based on the principles of machine learning. Furthermore, the role of instructor and course facilitator is extremely crucial in the knowledge transfer process, therefore the instructor side need to be explored, in which exploration of personality, success factors, capacities and capabilities and interpersonal skills could also be a good contribution. Lastly, since the world is going through the pandemic of COVID-19 and majority of the institutions are operating on online basis, therefore the complexity, easiness and acceptance of Sustainable Development education through online mode need to be studied.

Disclosure statement

No potential conflict of interest was reported by the authors.

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