

Examining the Dimensions of Academic Disengagement in Learning Vocational Courses

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There is a dearth of domain-specific studies examining students' lack of interest in academic engagement. Anchoring in the concept of disengagement as a multidimensional construct, this study employed a scale development approach to identify the underlying dimensions of academic disengagement among Filipino students enrolled in technical and vocational courses. In Study 1, the initial version of the TVE Learning Disengagement Scale (TLDS) was developed and administered to high school students ($N = 459$). A nine-factor model was identified using exploratory factor analysis (principal component analysis), comprising parental influence, general aversion to TVE as a subject, value beliefs, effort beliefs, classmate-related interactions, ability beliefs, lack of instructional materials and facilities, aversion to the subject's specific tasks and demands, and teaching pedagogy. In Study 2, confirmatory factor analysis was employed to examine the nine-factor model in a larger sample ($N = 1624$ students). Results provided support for its goodness of fit to the data. Taken together, the findings provide evidence of reliability, construct- and criterion-related validity. The development of TLDS will help craft appropriate intervention programs that address specific factors affecting students who struggle with academic disengagement in TVE classes.

Keywords: TVE academic disengagement, mixed-methods, multidimensional construct

INTRODUCTION

One of the contemporary issues in the present time is understanding the reasons why students are academically disengaged (Chipchase et al., 2017). While academic disengagement as a general domain or concept has been extensively studied (most recently, Balwant, 2018; Soland et al., 2019; Fredricks et al., 2019), only a few have investigated this in the context of subject-specific domains (e.g., physical education: Gray et al., 2017; mathematics: Fielding-Wells et al., 2017; environment: Pelletier et al., 1999). So far, to the authors' knowledge, very limited research has examined students' disengagement in learning technical and vocational courses, particularly among secondary school students in an Asian setting.

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Taxonomizing the reasons why students are not engaged in learning technical and vocational courses is important in several ways. First, theoretically, while numerous studies have already explored the domain-, subject-specific academic engagement and motivation (e.g., Bong, 2001; Green et al., 2007), there is a dearth of evidence on whether this applies to learning disengagement. This study hypothesized that, like the multifactorial nature of academic engagement, learning disengagement should also be construed as multidimensional. Second, given topical and contextual differences, it would be of theoretical interest to know if the potential components extracted from this study will resemble other subject-specific factors of disengagement previously investigated (e.g., Bourgeois & Boberg, 2016; Patall et al., 2018) or the dimensions suggested from general theories of academic disengagement (e.g., Brint & Cantwell, 2014; Iachini et al., 2013). Finally, with practical implications, understanding the specific reasons why students are not engaged in technical and vocational courses will provide curriculum developers and teachers with information to craft interventions that increase the motivation of low-performing students and decrease the dropout rates in technical and vocational classes. The two current studies were conducted to develop, examine, and validate a multifaceted form of vocational course learning disengagement among Asian students, particularly Filipinos, using a scale development approach.

This study advances existing theoretical frameworks by developing a domain-specific, multidimensional model of disengagement in Technical Vocational Education that integrates motivational constructs with socio-relational and structural factors. Prior research has established that engagement and disengagement are multifaceted constructs encompassing behavioral, emotional, and cognitive components (Fredricks et al., 2004), yet much of this work has examined disengagement at a general academic level. Few empirical studies have investigated the nuances of disengagement in the specific domain of technical and vocational education (Figueredo et al., 2023; Adams & Lee, 2022). To the authors' knowledge, no prior empirical studies have validated the multifactorial nature of disengagement in Technical Vocational Education in the Southeast Asian context. The present study addresses this gap by providing a nuanced theoretical perspective on disengagement within TVE contexts, thereby enriching the literature on academic disengagement in domain-specific educational settings. To address the objectives of the study, the following research questions were examined: (1) What construct-related evidence supports the hypothesized latent model of disengagement in the TVE context? (2) What criterion-related evidence supports the best-fitting model of disengagement through its associations with academic engagement, general academic disengagement, and amotivation?

Perspectives of Learning Disengagement

Extensive literature has identified domain-, subject-specific factors of engagement and motivation (Legault et al., 2006; Wigfield & Guthrie, 2010). However, there is a scarcity of studies investigating domain- and subject-specific learning disengagement. Of the few studies investigating learning disengagement, subject-specific learning disengagement, particularly the TVE-related learning disengagement, is yet to be investigated in a more quantitative, scale development approach. To better

appreciate the conceptualization of learning disengagement, understanding prior work is necessary. There are three dominant views of learning disengagement. Academic amotivation theory (Legault et al., 2006), expectancy value theory (Vansteenkiste et al., 2005; Eccles & Wigfield, 2002), and demotivation theory (Dörnyei, 2001). In the academic amotivation theory, disengagement, closely related to amotivation, is construed as the state in which students cannot perceive a relationship between their behaviour and that behaviour's subsequent outcome (Legault et al., 2006). As a consequence, students are likely to feel disengaged or detached from their tasks, be unwilling to put in effort, and give up learning completely (Shen et al., 2010; Shin & Kim, 2017). Legault and colleagues (2006) contend that there are four factors that contribute to students' experiencing amotivation. These four factors include students' self-appraisal of their (in)ability to carry out the required academic tasks (ability beliefs), (in)capability to exert effort and maintain these efforts amidst difficulties to perform the necessary actions to finish an academic task (effort beliefs), (in)ability to find importance or relevance in performing the required task (value placed on task), and the (un)desirable features of the academic tasks they are expecting to perform (characteristics of the task).

The second perspective, expectancy value theory (EVT; Vansteenkiste et al., 2005), posits that students tend to disengage from their academic tasks due to low expectations of achieving a particular goal (expectancy for success) that is perceived to have high value (task value). Task value is characterized by four constructs: the enjoyment students feel from performing the tasks (interest value), the importance that students place on the academic task or domain personally (attainment value), students' perceptions of how useful the learning in school is to their personal goals (utility value), and the extent to which students believe they need to sacrifice, to do well academically (cost). EVT contends that students who are disengaged with their academic tasks are likely to have lower appreciation on the value of tasks they have to perform in achieving their goals, specifically manifested through having low interest in learning, experiencing lack of confidence to perform academic tasks, having a perception that what they are doing lack relevance, and possessing the belief that the required tasks to achieve their goals are personally too costly for them.

The third perspective is from the demotivation theory (Karaca & Inan, 2020). Dörnyei (2001) defined demotivation as a state in which students' levels of motivation decrease. Numerous studies have been conducted to investigate the demotivating factors that would describe demotivation (Hassaskhah et al., 2015; Jahedizadeh et al., 2016; Dörnyei, 2001). These demotivating factors include teacher-related factors (e.g., teachers' incompetence, lack of commitment, unenthusiastic teaching, and inappropriate teaching method; Dörnyei, 2001; Karaca & Inan, 2020; Jahedizadeh et al., 2016), inadequate school facilities (Meshkat & Hassani, 2012), classroom-related activities (e.g., monotonous tasks, boring lessons; Jahedizadeh et al., 2016; Kikuchi, 2015), and classroom-environment factors (e.g., large class size, classroom climate; Dörnyei, 2001). However, Sakai and Kikuchi (2009) further extend the conceptualization of demotivation that leans toward internal, person-related factors such as low levels of self-confidence due to past

experiences of failure (Dörnyei, 2001; Kikuchi & Sakai, 2009), lack of perceived competence (Ng et al., 2004), feeling of inferiority in ones' ability (Ikeno, 2002), and decreased levels of interest (Lee & Oh, 2011). Collectively, it could be asserted that students who are academically disengaged were initially motivated to pursue activities but eventually became disinterested due to detrimental external and internal factors.

While the dominant theories discussed provide established theoretical explanations for why students are disengaged in their academic tasks, this study contends that examining reasons behind students' disengaging attitude should be subject-specific (i.e., TVE learning process), ideographic (i.e., students' reasons in disengaging from their academic tasks), culture-specific (i.e., Filipino students), and systemic (i.e., combination of variant approaches to data collection and analysis). With this, two studies will be conducted to develop, examine, and validate a possible multifaceted TVE learning disengagement among Filipino students.

STUDY 1

In Study 1, we developed and validated a scale that measures students' learning disengagement in learning TVE and identified its underlying factor structure.

Method

Scale Development: Participants and Procedure

Phase 1: Item Generation. To generate the items, focus group discussions were conducted separately with students and teachers. Participants comprised nine teachers and eight students drawn from three major public secondary schools. Additionally, four experts from a leading teacher education institution offering the TVE program were interviewed. Following the qualitative data collection, responses were transcribed, coded, and converted into item-format statements. The transcribed responses were coded in a two-stage process. The first stage was to analyze responses by sentence and identify those that describe beliefs and practices associated with an academically disengaged student (e.g., "I do not want to learn TVE in school because some skills needed in the subject are no longer useful"). The second stage involved additional coding based on the similarities of the responses. For example, "I feel a bit lazy" was assigned the same code as "I feel lazy" because they convey similar content. The coding was conducted by a team composed of a psychologist, a research assistant, a teacher education professor, and a language expert. Interrater reliability was evaluated using percentage agreement across coders. A minimum agreement threshold of 75% was established for item retention, consistent with established practices in qualitative coding. Items that did not meet this criterion were excluded from further analysis to ensure consistency and content validity. Upon completion of the second coding, the responses were converted into item statements rated from 1 (not at all) to 7 (exactly). It should be noted that those labeled with similar codes in the second stage were merged into a single-item statement to avoid redundancy.

Phase 2: Item Analysis and Initial Estimation of Validity. The revised items constituted the initial version of the *TVE Learning Disengagement Scale (TLDS)*, which, together with the informed consent

form, was administered to a sample of enrolled high school students. After data collection, encoding, screening, and cleaning, a series of exploratory analyses using PCA was conducted to yield a factor structure that is interpretable and meaningful. The sample comprised $N = 459$ enrolled junior high school students taking TVE subjects; 39.4% ($n = 181$) were male, 59.5% ($n = 273$) were female, and 1.1% ($n = 5$) did not indicate their gender. Purposive sampling was employed to select participants from vocational learning environments, ensuring a targeted representation of individuals relevant to the TVE context for a robust analysis of disengagement factors. The respondents' mean age was 15.30 years ($SD = 1.68$). Prior to the administration of the scales, approval from relevant authorities, informed consent from parents and assent from the respondents were sought. The study procedures have been reviewed and approved by an ethics review committee at the College of Education, [Blinded].

Measures

TVE Learning Disengagement Scale (TLDS). The scale developed in Study 1 comprises 36 items and uses response categories ranging from 1 (*not at all*) to 7 (*exactly*). TLDS has a Cronbach's α of .914 in this study.

Data Analysis

Upon completion of questionnaire administration and collection from respondents ($N = 459$), the data were encoded, organized, and cleaned. Missing items were handled using the expectation-maximization method. Exploratory factor analysis was carried out using the principal components extraction method with a varimax rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy was computed to determine if the data were suitable for principal components analysis, and Bartlett's test of sphericity was determined to assess the sufficiency of correlation between variables to proceed with the analysis. Principal Components Analysis (PCA) was employed as a data-reduction technique to examine the scale's preliminary factor structure and reduce item redundancy. This approach is appropriate in early-stage scale development, where the goal is to identify patterns among items. Factor retention was based upon a combination of the Kaiser criterion, requiring eigenvalues greater than one, and a scree plot inspection to identify the point of inflection where factor variances decline. Furthermore, we assessed the suitability of the dataset for factor analysis by evaluating the Kaiser-Meyer-Olkin measure of sampling adequacy and conducting Bartlett's test of sphericity to confirm the factorability of the item correlations. In calculating internal consistency, Cronbach's alpha was utilized.

Results

From a sample of 459 students, a series of EFA using PCA was implemented to extract meaningful and interpretable factors. Prior to running EFA, the Kaiser-Meyer-Olkin measure of adequacy was found to be at a range of .942, indicating suitability in implementing factor analysis. Bartlett's test of sphericity was also found to be significant ($p < .001$), indicating sufficient correlation among variables and thereby justifying further analysis.

Employing the Kaiser-Guttman retention criterion of eigenvalues greater than 1.0, results indicated a nine-factor solution with the clearest extraction and interpretable factors (see Table 1). These factors account for 64.160% of the total variance. Factor 1 (*parental influence*) comprised of four items with an accumulated eigenvalue of 2.859 and accounts for 7.941% of the variance. This factor pertains to parents' opinions, attitudes, or actions that influence students' attitudes towards TVE. The second factor, *general aversion to TVE as a subject*, pertains to how students characterize their views and emotions towards TVE. This factor accounts for 7.767% of the total variance with an eigenvalue of 2.796. The third factor, *value beliefs*, accounts for 7.330% of the total variance with an eigenvalue of 2.639. Factor 3 describes how students perceived the value and relevance of TVE as a subject and its class-related tasks.

Factor 4, *effort beliefs*, accounts for 7.253% of the total variance with an eigenvalue of 2.611. Effort beliefs demonstrate students' desire and capacity to exert energy and effort to complete the TVE tasks. The fifth factor, *classmate-related interactions*, reflects students' interactions with classmates during TVE class. This dimension accounts for 7.236% of the total variance with an eigenvalue of 2.605. The sixth factor, *ability beliefs*, represents students' perceived (in)competence when faced with academic difficulties, particularly in TVE class. This factor accounts for 7.088% of the total variance with an eigenvalue of 2.552. The seventh factor, *lack of instructional materials and facilities*, has an eigenvalue of 2.459 and accounts for 6.830% of the variance. This depicts the (in)adequacy of learning materials that make learning more understandable to students during TVE class. Factor 8, aversion to the subject's specific tasks and demands, has an eigenvalue of 2.292 with an accounted variance of 6.366%. This factor depicts the unappealing effects of learning tasks in TVE. The last factor, *teaching pedagogy*, has an eigenvalue of 2.286 with an accounted variance of 6.349%. This trait pertains to the experiences, thoughts, and emotions of students with teachers' methods and practices when teaching TVE.

STUDY 2

In Study 2, we sought to confirm the factor structure of TLDS (i.e., 9-factor model) that we identified in Study 1. Further, we examined the criterion-related evidence of TLDS using scales that measure similar constructs: engagement and disengagement (Jang & Reeve, 2016) and academic amotivation (Legault et al., 2006).

Method

Participants and Procedures

The participants were 1624 enrolled high school students; $n = 684$ (42.1%) males, $n = 937$ (57.8%) females, while $n = 3$ (.2%) did not indicate their gender. Participants were purposively sampled from vocational learning settings to ensure a focused representation of TVE-relevant individuals, enabling an appropriate examination of disengagement factors. The respondents had a mean age of 15.04 years ($SD = 1.601$). Prior to the administration of the scales, approval from relevant authorities, informed consent from parents, and assent from the respondents were

sought. The procedures of the study have been reviewed and approved by an ethics review committee from the College of Education, [Blinded].

Measures

TVE Learning Disengagement Scale (TLDS). The TLDS is a 36-item self-report instrument that aims to measure the lack of motivation of students towards TVE. There were nine subscales, namely parental influence, general aversion to TVE as a subject, value beliefs, effort beliefs, classmate-related interactions, ability beliefs, lack of instructional materials and facilities, aversion to subject's specific tasks and demands, and teaching pedagogy. The scale was rated on a 7-point Likert scale ranging from 1 (does not correspond at all) to 7 (corresponds exactly). The Cronbach's α reported in this study is .905.

Academic Amotivation Inventory. The Academic Amotivation Inventory (AAI) measures the degree of students' lack of motivation towards studying. The scale was adopted, and revisions were made specifically in the context of TVE since AAI was general in terms of its subject matter. AAI consists only of 16 items comprised of four components of academic amotivation: ability beliefs (e.g., *Because I don't have what it takes to do well in TVE class*), value of task (e.g., *Because for me, TVE holds no interest*), effort beliefs (e.g., *Because I'm a bit lazy for TVE class*), and task characteristics (e.g., *Because I find that studying TVE is boring*). Items are rated on a 7-point scale (1= does not correspond at all; 4= corresponds moderately; 7= corresponds exactly). The instrument has demonstrated strong evidence of validity and reliability (e.g., Green-Demers et al., 2008). The AAI in the current study has a reliability coefficient of .946.

Engagement-Disengagement Scale. The Engagement-Disengagement Scale (EDS) is a 39-item instrument (Jang & Reeve, 2016). This measure was assessed as multidimensional construct that featured behavioural, emotional, agentic and cognitive aspects. Statements were contextualized to reflect students' engagement and disengagement towards TVE. Items were rated on a 5-point Likert scale ranging from 1=Strongly Disagree to 5=Strongly Agree. To assess emotional and behavioural engagement-disengagement, 5-item behavioural engagement (e.g., *I pay attention in TVE class*), 5-item emotional engagement (e.g., *TVE class is fun*), 5-item behavioural disaffection (e.g., *I don't try very hard in TVE class*), and 5-item emotional disaffection (e.g., *TVE class is no fun for me*) were adapted from Engagement versus Disengagement with Learning Measure (Skinner et al., 2009). To assess agentic engagement-disengagement, 5-item agentic engagement (e.g., *I let my TVE teacher know what I need and want*) and 5-item agentic disengagement (e.g., *In TVE class, I avoid asking questions*) scales were utilized from Agentic Engagement Scale (Reeve, 2013). Four items from Deep Learning Measure were used to assess cognitive engagement (e.g., *When reading for TVE class, I try to explain the key concepts in my own words*), and five items from Study Disorganization Measure to assess cognitive disengagement (e.g., *I'm not sure how to study for TVE*) (Senko & Miles, 2008). There were studies showing the validity and reliability of this scale (Senko & Miles, 2008; Jang et al., 2016). In this study, the Cronbach's α is .896.

Data Analysis

To examine the nine-factor structure of the TLDS, Confirmatory Factor Analysis (CFA) was conducted. Correlated error terms were constrained to zero to preserve model parsimony and ensure that the model reflects theoretically meaningful relationships among latent constructs rather than data-driven modifications; by implication, with constrained correlated errors, the model assumes that each latent factor is uniquely captured by its specified indicators, without any overlap with other factors that could otherwise obscure the structural integrity of the hypothesized measurement model. CFA has been widely used to test the validity of a measure by confirming the factor structure of an *a priori* proposed model (Netemeyer et al., 2003). All statistical analyses were conducted using Mplus Version 7.11 software (Muthén & Muthén, 2013). Due to the non-normality of data distribution, robust maximum-likelihood with mean-adjusted Satorra-Bentler chi-square statistics (Satorra & Bentler, 2001) was used as the estimation method. The following were used to evaluate model goodness of fit: Satorra-Bentler chi-square ($S-B\chi^2$); root mean square error of approximation (RMSEA; values $< .08$ were regarded adequate fit, while values $< .06$ were considered excellent fit); and comparative fit index (CFI) and Tucker-Lewis index (TLI) (values $> .90$ were regarded adequate fit, while values $> .95$ were considered excellent fit (Hu & Bentler, 1999). Correlations of TLDS with related constructs (i.e., engagement, disengagement, and academic amotivation) were also examined for further evidence of criterion-related validity.

Results

The results show that the nine-factor model showed excellent fitting $S-B\chi^2$ ($df = 558, N = 1624$) = 1148.593, $p < .001$; CFI = .957; TLI = .951; RMSEA = .026 (90% CI = .023, .028). Further scrutiny of the standardized factor loadings indicated that the items are well-embedded in their corresponding factors. These findings suggest that this model, showing the multifactorial nature of learning disengagement towards learning TVE, is construct-valid. Moreover, Harman's one-factor test was conducted to assess the possibility of common method bias in the sample. The results revealed that the general factor explained 25.47% of the variance, which is below the recommended threshold of 50%. This suggests that the sample does not suffer from common method bias and that the variation of responses is due to the participants' actual predispositions.

In further strengthening criterion-related evidence of validity, TLDS' general score and factors were related to academic engagement-TVE, academic disengagement-TVE, and AAI-TVE (see Table 2). Additionally, the findings show that TLDS and its components are negatively related to engagement and positively associated with disengagement and amotivation.

GENERAL DISCUSSION

Study 1 aims to develop and validate a scale to measure learning disengagement among Filipino high school students in TVE subjects and to identify its underlying factor structure. Study 2 confirms the factor structure of TLDS (i.e., the 9-factor model) identified in Study 1. The data of the two studies show the multidimensionality of subject-specific academic disengagement. While academic disengagement has been widely

studied in a more general learning domain, the current findings reveal that its multidimensionality also holds in more domain- and subject-specific contexts. The data in Study 1 extracted 9 factors, while Study 2 confirmed that these factors fit the data well.

The emergence of a nine-factor structure reflects the domain-specific complexity of disengagement in TVE. While several dimensions—such as value beliefs, effort beliefs, ability beliefs, general aversion to subjects, and specific aversion to class-related tasks—are consistent with established motivational frameworks (e.g., expectancy-value theory and academic amotivation), the present results also demonstrate that other theoretical perspectives are needed to extend the current model to account for the disengagement of students in TVE classes. Significantly, in addition to these theory-derived components, the inclusion of factors such as parental influence, classmate-related interactions, and lack of instructional materials and facilities underscores the role of socio-relational, instructional, and institutional conditions. In sum, these results highlight the context-specific nature of disengagement in TVE, shaped by the combined influence of individual and environmental factors. These results endorse ecological frameworks positing that disengagement stems from the interplay among individual, social, and institutional influences, beyond mere internal motivational dynamics (Wang et al., 2023; Quin, 2017). Overall, these findings suggest that the identified structure represents a theoretically grounded, domain-specific extension of existing models. By integrating both theory-driven and empirically derived dimensions, the TLDS provides a more comprehensive account of disengagement that reflects the realities of Technical Vocational Education contexts.

To further interpret these dimensions, each factor is discussed in relation to existing literature. The first factor, parental influence, concerns parents' negative perceptions of TVE. The current finding suggests that students are likely to be disengaged in learning TVE due to their parents' belief that the subject is not important (item 2) and should not be a priority (e.g., items 1, 3, 4). This finding complements Wonacott's (2000) observation that parents tend to associate TVE with students who lack academic competence and have chosen a career path leading to low-profile, technical, or vocational work. Similarly, examining the data from the study's post-interviews with teachers reveals a common observation: students' parents favor prioritizing language, science, math, or business-related subjects over TVE, believing these will better prepare them for college courses and degrees. This situation is unfortunate, given that numerous studies have shown that when parents show less interest in their children's educational activities, children are likely to exhibit poor academic interest (Atta & Jamil, 2012; Devlin et al., 2012).

The second factor, the general aversion to TVE as a subject, describes students' general negative views and aversive emotions towards TVE. The general aversion against TVE can stem from a variety of factors. One potential factor that contributes to negative views and emotions toward TVE is the societal perception that vocational education is inferior to other educational programs (Alavi & Sail, 2013). This creates negative stereotypes about the subject and leads students to construe TVE as less valuable than other academic subjects (Puckett et al., 2012; Yau et al., 2018).

The third factor, value beliefs, concerns the students' perceived value and relevance of TVE to their lives. The evidence shows that disengagement occurs because students do not see TVE as important to their lives (item 12), valuable to their future careers (item 9), or to their livelihoods (item 10). These results complement the notion of utility and attainment values (Cole et al., 2008; Leroy & Bressoux, 2016), in which learning disengagement occurs when students perceive the subject or topics as neither relevant to them (i.e., utility value) nor important for achieving their goals (i.e., attainment value). In this case, students who do not see TVE as pertinent and meaningful to their life plans are likely to be less persistent, less participative, and less engaged in the subject's academic tasks.

The fourth factor, effort beliefs, concerns students' beliefs that their efforts do not lead to improved outcomes in the TVE class. The results indicate that students with low-effort beliefs tend to lack energy, feel bored, and find class activities tiring. Legault et al. (2006) describe effort beliefs as students' beliefs that they cannot sustain the necessary effort to complete tasks. Shen et al. (2010) contend that although students know the effort required for an academic task, their low-effort beliefs can lead to disengagement because they believe they cannot sustain the effort needed to perform it.

The fifth factor, class-related interactions, pertains to the (un)healthy relationships with classmates. Memari and Gholamshahi (2018) observed that, for instance, if the class's social environment is unfriendly and uncooperative, students may lose enthusiasm and eventually disengage from academic tasks. The result is specifically true in the context of a collectivist cultural orientation. Individuals in a collectivist culture, such as the Philippines, emphasize cooperation, interdependence, and social affinity (Cortina et al., 2017; Bailey & Dua, 1999). Hence, when disharmony exists in one's social environment, members of a particular social group may be less likely to participate in activities that could disturb and further strain relationships (Hanish et al., 2016; Steenberghs et al., 2021).

The sixth factor, ability beliefs, pertains to students' (lack of) belief in their ability to successfully complete a particular task. This factor implies that students who believe they lack the ability to learn and accomplish specific tasks tend to be hindered in their engagement with TVE. The link between ability beliefs and learning engagement can be demonstrated by the fact that students who believe they cannot complete a task are likely to be unsuccessful (Battin-Pearson et al., 2000). Several studies have shown that when students believe their ability to cope with subject difficulties is deficient, they become more academically detached and disengaged from learning (Legault et al., 2006; Eccles et al., 1993).

The seventh factor, lack of instructional materials and facilities, refers to students' experiences of the schools' (in)adequacy in providing the necessary learning materials. In vocational and technical education programs, buildings, well-equipped workshops, and laboratories are necessary (Adakole & Kennedy, 2016; Odo et al., 2017). However, this is not always the case in most schools. For instance, in this study, students' disengagement could be attributed to insufficient books and references, lack of materials for class activities, inadequate facilities and tools, and limited internet access. Mupa and Chinooneka (2015) stipulated that

inadequate instructional materials and facilities can make the teaching session boring, abstract, and theoretical. Thus, it is expected that students' learning is hindered as they become less motivated to be involved in class activities (Audu et al., 2013; Amedorme & Fiagbe, 2013).

Factor 8, aversion to the subject's specific tasks and demands, captures the students' negative characterization of TVE's class activities and course requirements. Students disengage in learning because they associate learning TVE with too many skills to master and too many projects and requirements to comply with. Although not explicitly referring to TVE, several studies have found that a lack of interesting and stimulating qualities in tasks may lead to disengagement, making it difficult to further motivate students (Ainley et al., 2002; King et al., 2015).

The last factor, teaching pedagogy, reflects students' experiences with teachers' methods and practices when teaching TVE. Numerous studies have reported that students' poor performance in various subject areas is associated with ineffective teaching methods (Comfort et al., 2017; Isa et al., 2020). If the teaching pedagogy is not student-centered, students may feel disengaged because they are not actively participating in the learning process (Krahenbuhl, 2016; Ali, 2019). For instance, when teachers focus solely on dispensing rules, definitions, and procedures for students to memorize, students become disengaged in class (Inayat & Ali, 2020). On the other hand, if the pedagogy takes into account the different learning styles and needs of individual students, it helps reduce disengagement (Albinson, 2016).

The multidimensional structure of the TLDS provides a systematic framework for identifying specific reasons for disengagement and aligning them with targeted interventions. For instance, value beliefs and effort beliefs—pivotal components of student motivation—could be reinforced through curriculum reforms that emphasize the practical applications and career advancement opportunities in vocational fields (Khalid et al., 2023). At the instructional level, beliefs about effort and ability underscore the importance of pedagogical approaches that promote persistence and self-efficacy. Strategies such as scaffolding, mastery-oriented instruction, and formative feedback can support students in developing confidence and sustained engagement in skill-based tasks (Lazowski & Hulleman, 2016; Alanazi et al., 2024; Vera & Vargas, 2025). Related to these factors is the teachers' pedagogy. To reduce the likelihood of teachers' pedagogy contributing to student disengagement, continuous professional development is recommended to equip educators with student-centered, interactive, and competency-based instructional approaches that bolster engagement and learning outcomes (Khalid et al., 2023). Furthermore, general aversion to TVE and specific aversion to TVE class tasks could be mitigated by incorporating bespoke curriculum designs and immersive, real-world projects that align educational pathways with individual career trajectories, thereby amplifying student motivation (Vasilev, 2024). At the curricular level, students' redesigning may mitigate general aversion to TVE learning experiences to emphasize relevance, authenticity, and real-world application, which have been shown to enhance engagement and interest (OECD, 2022; Wang et al., 2023). In relation to task design, developing can address aversion to subject-specific demands varied and appropriate learning activities aligned with students' skill levels, thereby

reducing perceived cognitive overload and enhancing engagement with the task (Sweller et al., 2019).

The findings underscoring the importance of both parental and peer relationships highlight the need for school-based initiatives that promote positive influences from parents and peers. Specifically, addressing the parental influence factor might necessitate parent education programs and awareness campaigns that emphasize the value and career relevance of TVE (Castro et al., 2015). By doing so, schools could foster a more supportive home environment for students pursuing vocational education (Ziyad, 2022). Moreover, in terms of classmate-related interactions, interventions could focus on collaborative learning strategies and peer mentoring programs that cultivate a supportive and inclusive classroom environment (Hauzel et al., 2024). Collaborative learning structures and well-designed group activities can cultivate accountability, cooperation, and student engagement (Gillies, 2016).

Finally, factors that are attributable to institutional and structural elements, such as insufficient instructional materials and inadequate infrastructure, necessitate systemic investments and policy reforms aimed at bolstering the quality and accessibility of vocational training facilities and resources. This lack of instructional materials and facilities reflects broader systemic challenges that require sustained investment in infrastructure, tools, and educational resources. These systemic enhancements are crucial for creating an environment conducive to effective learning and skill development, thereby directly addressing contributors to student disengagement and improving retention rates within vocational education programs (Sripan & Sujivorakul, 2020). Policymakers could formulate targeted proposals and strategic plans that prioritize funding and resource allocation to upgrade learning environments and facilities in TVE institutions. Evidence suggests that effective vocational education systems are characterized by coherent policy integration and adequate resourcing, whereas underfunded systems often struggle to provide meaningful educational experiences (Bano, 2025). These improvements are critical given that issues like exhausted learning materials, poor classroom conditions, and inadequate facilities have been identified as key institutional factors contributing to student attrition in technical and vocational education (Sabtu et al., 2016). Taken as a whole, the findings reinforce the view that academic disengagement is a contextually embedded, multidimensional construct that requires coordinated interventions at the individual, instructional, and systemic levels. The TLDS not only serves as a psychometrically sound instrument for assessing disengagement in TVE but also provides a practical and policy-relevant framework for designing targeted strategies to improve student engagement and educational outcomes.

Criterion-Related Evidences of Validity

Study 2 provided criterion-related evidence of validity. The results reveal that TLDS's general score and its components were significantly related to the factors of the Academic Amotivation Inventory–TVE. The association between academic disengagement and amotivation is well-established in the extant literature (Ferrer et al., 2020; Lee et al., 2020). Understandably, students who lack motivation to participate in learning TVE are more likely to disengage from the learning process, not bothering

to complete assignments, participate in discussions, or exert effort in their studies.

Study 2 further evidenced the TLDS' criterion validity as the results show a consistent pattern of negative relationships between TLDS' components and academic engagement (see Table 2). The results suggest that academically disengaged students in TVE classes are less likely to be behaviourally, emotionally, and cognitively engaged in learning.

Limitations of the Study

Amidst the potential contribution of the current findings to the extant literature, a number of limitations must be noted. First, the generalizability of the findings is limited to public high school students. It would be interesting to examine whether a similar latent structure of TLDS could be observed among students in private, non-formal, or technical/vocational schools. Second, the present study is limited by its cross-sectional design. It would be interesting to expand our understanding of the stability of the TLDS by testing its invariance over time through longitudinal studies. Finally, the use of self-report measures may introduce common method bias, particularly, social desirability bias. Future studies could include social desirability and other related scales to statistically control for them and assess whether a similar TLDS factor structure can be confirmed.

Despite the aforementioned limitations, the study's findings substantially contribute to the existing literature on learning disengagement. First, while previous studies have examined learning disengagement, this is one of the few that focus on subject-specific disengagement. And so far, to the author's knowledge, this is among the first studies to examine disengagement in TVE learning. Second, aside from the specificity of the subject, TLDS is context- and culture-specific, as the items were generated through a qualitative data collection approach. Third, the sample is from an Asian, low-income, and rural environment. This is significant given that most studies examining disengagement have used high-income, urban, and non-Asian samples. Lastly, the present findings can be used by curriculum developers, school administrators, and educators to design and craft appropriate intervention programs for implementation that address every specific factor of TVE academic disengagement.

Conclusion

Although the present study was conducted within a Filipino context, the findings may have broader relevance to vocational education settings beyond this sample. The dimensions identified in the TLDS reflect core motivational, social, instructional, and institutional factors that have been widely documented in the literature on academic engagement and disengagement across diverse educational systems. In particular, constructs such as value beliefs, effort beliefs, ability beliefs, and instructional quality are grounded in established theoretical frameworks, including expectancy-value theory, and have demonstrated cross-cultural applicability (Rosenzweig et al., 2022; Wang et al., 2023). Moreover, large-scale comparative research suggests that student engagement is shaped by similar psychological and contextual mechanisms across countries despite differences in educational systems (OECD, 2022). At the same time, the expression and relative salience of these dimensions are

shaped by sociocultural contexts and the structural positioning of vocational education within different educational systems. For instance, factors such as parental influence and perceptions of vocational pathways may vary depending on cultural norms, societal expectations, and the status accorded to technical and vocational education (UNESCO-UNEVOC, 2022). Thus, while the multidimensional structure of disengagement identified in this study may be generalizable, its specific manifestations are context-dependent. Future research is needed to examine the cross-cultural validity of the TLDS and to determine how these dimensions operate across diverse vocational education contexts.

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Table 1. Exploratory factor analysis factor loadings of study 1

	F1	F2	F3	F4	F5	F6	F7	F8	F9
1. My parents want me to learn more other subjects than TVE.	.786								
2. My parents find TVE not important.	.741								
3. My parents find TVE lowly.	.728								
4. I receive less support from my parents.	.652								
5. It is not interesting to me.		.765							
6. I just don't feel the subject.		.705							
7. I am not willing to learn TVE.		.694							
8. It is not motivating to me.		.634							
9. It is not important to my future career.			.777						
10. It is not useful to my future livelihood.			.734						
11. I find no value			.659						

learning TVE.	
12. I could not appreciate the importance of TVE.	.568
13. I get sleepy listening to the teacher.	.759
14. I feel lazy in learning TVE.	.749
15. It is boring.	.713
16. Participating in the class activities is tiring.	.593
17. My classmates do not help in group projects.	.821
18. My classmates are overly dependent on me.	.776
19. My classmates do not cooperate in groupwork.	.736
20. My classmates just want to receive grades without any effort.	.700
21. I am slow in solving class problems.	.758
22. I am not good in analyzing things.	.707

23. I have hard time in coping with the lessons.	.684
24. I have difficulty understanding the lessons in class.	.608
25. There are insufficient books and other references.	.750
26. The school lacks materials for class activities.	.741
27. The school lacks facilities and tools to use.	.737
28. The school lacks access to resources and internet.	.600
29. There are too many skills to master.	.826
30. It requires a lot of skills to finish a project.	.744
31. There are a lot of things to do.	.650
32. It requires me to measure a lot of things.	.589
33. The teacher does not discuss well the lessons.	.711
34. The teacher lacks	.683

ways of
delivering
lessons.

35. The ways
of teaching
are not fun. .585

36. The
teacher does
not provide
stimulating
classroom
activities. .547

All factor loadings are significant at the 0.01 level.

Table 2. Correlations among TLDS dimensions and other constructs in study 2

	F1	F2	F3	F4	F5	F6	F7	F8	F9	TOTAL
Parental influence										
General aversion to TVE as a subject	.462**									
Value beliefs	.403**	.563**								
Effort beliefs	.315**	.484**	.372**							
Classmate-related interactions	.312**	.272**	.180**	.258**						
Ability beliefs	.476**	.512**	.376**	.410**	.343**					
Lack of instructional materials and facilities	.281**	.371**	.269**	.297**	.278**	.368**				
Aversion to subject's specific tasks and demands	.173**	.154**	.133**	.264**	.211**	.225**	.247**			
Teaching pedagogy	.470**	.565**	.427**	.452**	.312**	.485**	.386**	.169**		
TLDS Total	.663**	.733**	.617**	.648**	.579**	.713**	.627**	.480**	.720**	
ACADEMIC AMOTIVATION										
Academic Amotivation Total	.332**	.408**	.375**	.311**	.132**	.378**	.163**	.093**	.366**	.425**

Value of Task	.301**	.359**	.342**	.286**	.119**	.308**	.116**	.077**	.318**	.369**
Ability Belief	.286**	.367**	.348**	.265**	.078**	.352**	.136**	.042**	.304**	.358**
Task Characteristic	.313**	.382**	.346**	.292**	.121**	.349**	.159**	.102**	.340**	.400**
Effort Belief	.282**	.346**	.302**	.266**	.149**	.340**	.169**	.110**	.341**	.387**
ENGAGEMENT										
Engagement Total	-.154**	.246*	.217**	.221**	.036	.196**	.096**	.049*	.199**	-.212**
Behavioural Engagement	-.160**	.255*	.251**	.226**	.042	.208**	.106**	.032	.190**	-.228**
Emotional Engagement	-.163**	.267*	.227**	.239**	.058*	.190**	.098**	.039	.241**	-.234**
Agentic Engagement	-.054*	.114*	.059**	.115**	.002	.098**	.056*	.062*	.107**	-.085**
Cognitive Engagement	-.151**	.198*	.204**	.167**	.020	.172**	.065**	.034	.135**	-.173**
DISENGAGEMENT										
Disengagement Total	.240**	.286*	.250**	.246**	.106**	.340**	.124**	.075**	.296**	.327**
Behavioural Disengagement	.192**	.209*	.186**	.201**	.110**	.263**	.099**	.078**	.236**	.264**
Emotional Disengagement	.224**	.302*	.280**	.265**	.102**	.316**	.148**	.069**	.315**	.336**
Agentic Disengagement	.192**	.224*	.177**	.189**	.088**	.276**	.067**	.033	.238**	.245**
Cognitive Disengagement	.216**	.244*	.209**	.187**	.065**	.310**	.110**	.079**	.225**	.274**

** $p < .01$ (two-tailed). F1- Parental influence; F2- General aversion to TVE as a subject; F3- Value beliefs; F4- Effort beliefs; F5- Classmate-related interactions; F6- Ability beliefs; F7- Lack of instructional materials and facilities; F8- Aversion to subject's specific tasks and demands; F9- Teaching pedagogy