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Enhancing Teacher Leadership to Improve Teachers' Job Performance: Enhancing Academic Achievement and Psychological Well-Being Through Self-Efficacy, Self-Regulation, and Social Support: An Organizational Development Intervention Study Among Vocational Game Design Students in Beijing

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Abstract

This study examines the impact of Organizational Development Interventions (ODIs) on academic achievement and psychological wellbeing of 60 second year Vocational Game Design students in Beijing Polytechnic through self-efficacy, self-regulation, social support, and psychological well-being. A mixed-methods approach implemented four interventions—goal-setting workshops, coaching sessions, team-based learning, and positive psychology activities—over one semester. Paired-sample t-tests revealed significant improvements in all variables ($p < .001$). Qualitative data from interviews, observations, and assignment analyses highlighted increased confidence, structured learning behaviors, peer collaboration, emotional resilience, and academic performance. Rooted in social cognitive theory, self-regulated learning, social support theory, and positive psychology, the findings demonstrate ODIs' effectiveness in fostering cognitive, behavioral, and emotional growth in creative vocational education. Recommendations inform curriculum development, faculty training, and institutional policy.

Keywords: Organizational Development Interventions, Self-Efficacy, Self-Regulation, Social Support, Psychological Well-Being, Academic Achievement, Vocational Education

Introduction

Vocational game design programs at Beijing Polytechnic demand technical expertise, creative innovation, and psychological resilience to navigate intense project deadlines and evaluative scrutiny. Preliminary diagnoses, conducted via semi-structured interviews and SWOT analysis with 20 second-year students, revealed persistent challenges: low self-efficacy in tackling design tasks, poor self-regulation leading to missed deadlines, limited peer support, compromised psychological well-being marked by stress and anxiety, and inconsistent academic performance in project deliverables. These findings necessitate targeted interventions to bolster both academic and psychological outcomes. Organizational Development Interventions (ODIs) offer a systematic approach to enhance individual and group performance

in educational settings by addressing cognitive, behavioral, and emotional dimensions. This study applies ODIs to improve self-efficacy, self-regulation, social support, psychological well-being, and academic achievement among 60 second-year Game Design students, aiming to foster sustainable growth in a high-pressure creative discipline.

Organization Background and Organizational Diagnosis

The research examines the Game Art Design program, begun in 2021 at a Beijing vocational college to prepare students for the gaming industry, tracking four groups: 35 students from 2021, who graduated in July 2024, and 60 each (freshmen, started in September). The research highlights a curriculum with design principles, 2D and 3D designs, interfaces, game concepts, and storyboards to grow skills and creativity. To uncover issues, the research involved one-on-one interviews, mostly face-to-face but some online, in quiet spots, with questions asked and notes taken. The research secured consent, recorded responses, and coded names for privacy, involving seven teachers—three associate professors, three lecturers, and one assistant professor—and 16 students from 2021 to 2023, with 12 solid responses.

SWOT Analysis

The research adopts a SWOT approach to assess traits and challenges in the Game Art Design program, providing a diagnostic tool for this study, as shown in Table 1.

Table 1

SWOT analysis

SWOT	
Strengths 1. Adding new teachers brings renewal of skills and knowledge, vitality, and competition. 2. Teachers have a strong sense of responsibility for teaching. 3. Students can feel a sense of accomplishment and happiness after overcoming difficulties and completing teaching tasks. 4. Rich digital content supplements traditional classroom experiences, aiding students in mastering various subjects.	**Weaknesses** 1. Lack of self-efficacy in students. 2. Lack of self- regulation. 3. Lack of student support behaviors. 3. Unsatisfactory psychological well-being. 4. Undesirable academic achievements.
Opportunities 1. BP is applying for upgrading to a vocational, undergraduate college. 2. School-enterprise cooperation is strongly advocated. Students have access to events, projects, and other resources related to the joint development of game design companies. 3. Increased remote work opportunities.	**Threats** 1. China's economic recovery is still at an early stage, mainly restorative, and domestic demand is still weak. 2. Employment is facing tremendous pressure on total employment and structural contradictions. 3. The impact and iteration of new technology development on existing technology.

Analysis of interviews

The research revealed that while teachers effectively plan lessons, students often lack motivation, become distracted by their phones, and struggle with stress. The study noted that many students feel anxious and unsure and need support. The research saw teachers fall behind

industry changes and lack tools for student stress. Students admitted to low confidence and focus, craving better methods and encouragement, and often feeling lost or worried. The study concludes that students need confidence and discipline, and teachers need updates and support skills.

Research Problem

1) What is the current status of students' self-efficacy, self-regulation, social support, psychological well-being, and academic achievement?

2) What ODIs can be designed and implemented to enhance students' psychological well-being, and academic achievement?

3) Are there significant differences in students' self-efficacy before and after the ODI implementation?

4) Are there significant differences in students' self-regulation before and after the ODI implementation?

5) Are there significant differences in students perceived social support before and after the ODI implementation?

6) Are there significant differences in students' psychological well-being before and after the ODI implementation?

7) Are there significant differences in students' academic achievement before and after the ODI implementation?

8) How do students perceive and experience the ODI, and how do these interventions affect changes in their, psychological well-being, and academic achievement?

Research Objectives

1) To assess the current status of students' self-efficacy, self-regulation, social support, psychological well-being, and academic achievement among the Game Design major at a vocational college.

2) To design and implement organizational development interventions (ODIs) aimed at enhancing students' psychological well-being, and academic achievement.

3) To examine the differences in students' self-efficacy before and after the ODI implementation.

4) To examine the differences in students' self-regulation before and after the ODI implementation.

5) To examine the differences in students perceived social support before and after the ODI implementation.

6) To examine the differences in students' psychological well-being before and after the ODI implementation.

7) To examine the differences in students' academic achievement before and after the ODI implementation.

8) To explore students' perceptions and experiences of the ODI and related changes across all five variables through qualitative interviews and classroom observations.

Literature Review

This section reviews five core variables—self-efficacy, self-regulation, social support, psychological well-being, and academic achievement—based on relevant theoretical and empirical literature. The review outlines the established academic concept, its specific definition within this study's context, and its relationship with other research variables. The aim is to ground the research framework in evidence-based theory while contextualizing it for vocational game art design education.

Self-efficacy

Bandura (1977) introduced self-efficacy, which describes individuals' belief in their capacity to execute specific tasks. In education, it refers to students' confidence in mastering content, applying strategies, and persisting through academic challenges (Pajares & Schunk, 2002). High self-efficacy has been linked to greater effort, resilience, and performance, particularly in creative learning environments (Schunk & DiBenedetto, 2020).

In this research, self-efficacy is defined as a student's confidence in initiating, sustaining, and completing academic tasks, specifically within game art design coursework. This construct is measured via five adapted items from Midgley et al. (2000) and Bandura (2006), focusing on persistence, feedback response, and skill acquisition.

self-efficacy influences students' self-regulation and academic achievement. Studies confirm that students with strong self-efficacy beliefs are more likely to adopt effective learning strategies and attain higher academic outcomes (Basileo et al., 2024; Zimmerman, 2000).

Self-regulation

Self-regulation involves learners' ability to manage thoughts, behaviors, and emotions to pursue learning goals (Zimmerman, 2000). Theoretical frameworks such as the self-regulatory cycle (Zimmerman, 2000) and self-determination theory (Deci & Ryan, 1985) describe this process as cyclical and volitional, integrating planning, monitoring, and reflection.

This study defines self-regulation as a student's ability to plan, implement, and adjust strategies to achieve academic goals. Measurement focuses on time management, task strategies, and goal setting, using modified scales based on Hart and Speece (1998), and Zimmerman and Schunk (2001).

Self-regulation acts as a mediator between motivation and achievement. It supports academic performance by reinforcing self-efficacy and facilitating persistence. Students with strong self-regulatory skills also report higher psychological well-being (Wang et al., 2022).

Social Support

Social support encompasses the emotional, informational, and instrumental help individuals receive from others. In academic contexts, it plays a stress-buffering role and contributes to engagement and well-being (Zimet et al., 1988).

Social support is defined as the emotional and practical assistance students receive from peers during collaborative learning. The measurement tool is adapted from the Multidimensional Scale of Perceived Social Support (MSPSS), tailored to reflect peer interactions.

Peer support strengthens students' self-efficacy and motivation. It contributes directly to psychological well-being and indirectly enhances academic achievement through emotional resilience and reduced stress (Fu et al., 2022; Rehman et al., 2020).

Psychological Well-Being

Psychological well-being (PWB) focuses on personal growth, autonomy, and life purpose. Ryff (1989) identified six dimensions, of which this study emphasizes purpose in life, positive relationships, and self-acceptance. PWB differs from subjective happiness, centering on human flourishing (Ryff & Keyes, 1995).

In this research, PWB is defined as students' capacity to maintain self-acceptance, form meaningful peer connections, and sustain a sense of academic purpose. It is assessed using a revised version of Ryff's PWB scale.

PWB mediates the relationship between learning strategies and academic engagement. Higher self-efficacy and peer support contribute to well-being, reinforcing motivation and academic success (Sun, 2022; Tesfaye, 2020).

Academic Achievement

Traditionally measured via test scores or GPA, academic achievement increasingly includes behavioral indicators like participation and task completion (Bloom, 1976; Geisinger et al., 2013). The expectancy-value model links achievement to perceived task value and effort.

This study defines academic achievement as students' consistent participation in learning activities, completing assignments, and creative projects. Measurement items are adapted from the Academic Performance Scale and the Adaptive Learning Patterns Scale (Midgley et al., 2000).

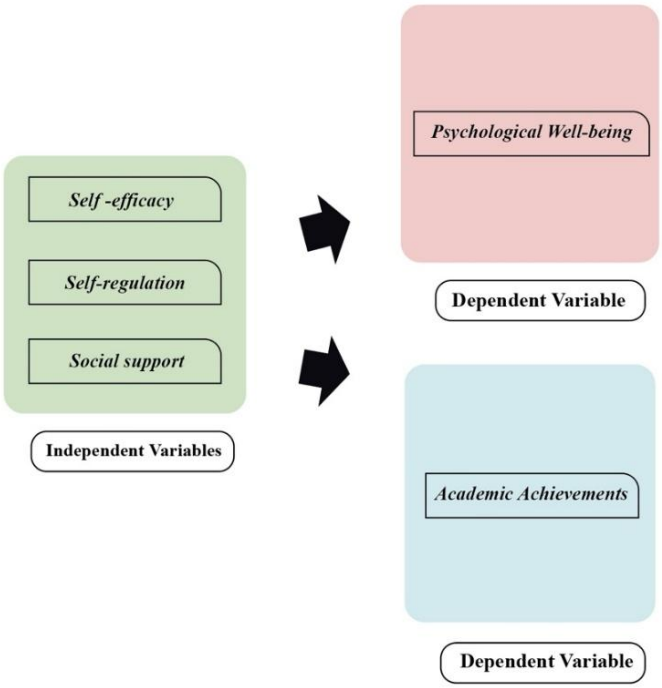
Academic achievement is the primary outcome variable, influenced by self-efficacy, self-regulation, social support, and psychological well-being. Interventions targeting these antecedents are designed to improve educational engagement and performance.

Conceptual Framework

Figure 1 illustrates the conceptual framework of this study. Based on established theoretical foundations and recent empirical findings, this study identifies self-efficacy, self-regulation, and social support as the independent variables (IVs). Psychological well-being is treated as a second dependent variable (DV), alongside academic achievement, rather than serving as a mediating variable.

Figure 1

Conceptual Framework



Action Research Framework

Guided by the Action Research Framework (see Figure 2), the researcher implemented a series of organizational development interventions to address students' learning and emotional challenges. Based on diagnostic findings, key issues were identified in areas such as self-efficacy, self-regulation, social support, and psychological well-being. In response, four targeted interventions were introduced: goal setting, coaching, team building, and positive intervention. These were grounded in students' real classroom experiences and designed to support both academic development and emotional resilience. Through setting meaningful goals, engaging in reflective coaching, building peer connections, and participating in well-being practices, students gradually developed greater confidence, more effective learning strategies, and a stronger sense of support and belonging.

Figure 2

Action Research Framework Guiding the Implementation of Organizational Development Interventions

Research Methodology

This section presents research hypotheses, research design, research sampling, researc h instruments, data collection, and data analysis process.

Research Hypotheses

$H1_o$: There is no significant difference in students' self-efficacy between pre- and post-ODI.

$H1_a$: There is a significant difference in students' self-efficacy between pre- and post-ODI.

$H2_o$: There is no significant difference in students' self-regulation between pre- and post-ODI.

$H2_a$: There is a significant difference in students' self-regulation between pre- and post-ODI.

$H3_o$: There is no significant difference in students' social support between pre- and post-ODI.

$H3_a$: There is a significant difference in students' social support between pre- and post-ODI.

$H4_o$: There is no significant difference in students' psychological well-being between

pre- and post-ODI.

$H4_a$: There is a significant difference in students' psychological well-being between pre- and post-ODI.

$H5_o$: There is no significant difference in students' academic achievement between pre- and post-ODI.

$H5_a$: There is a significant difference in students' academic achievement between pre- and post-ODI.

Research Design

This study adopted a mixed-methods approach within a participatory action research framework to improve five key student outcomes—self-efficacy, self-regulation, social support, psychological well-being, and academic achievement. A quasi-experimental design was applied to 60 second-year Game Art Design students at a vocational college. All students enrolled in the course were invited to participate, and the full cohort was included without random sampling. The intervention spanned one academic semester and was structured into two main stages: an initial diagnostic and planning phase, followed by the implementation of four targeted interventions—goal setting, coaching, team building, and positive psychology activities. Quantitative data were collected through structured questionnaires administered in the first and final weeks of the semester. Qualitative insights were gathered through semi-structured interviews, classroom observations, and analysis of student assignments. While faculty delivered the course content, the researcher led the OD interventions and managed the data collection. This dual-method approach ensured both statistical rigor and contextual depth in capturing the impact of the interventions (Creswell, 2014).

Research Population

The study involved 60 second-year Game Art Design students at Beijing Polytechnic. All participants joined the Organizational Development Intervention (ODI) voluntarily during a character design course held outside class hours. As shown in Table 2, all were majoring in Game Art Design; 92% were aged 19-20, and most were male—reflecting common demographics in this field. The intervention was led by two OD specialists, both doctoral graduates from Assumption University, Thailand, with academic and industry experience detailed in Table 3.

Table 2

Demographic Characteristics of Respondents (n = 60)

Demographic variables	Content	Frequency	Percentage
Gender	Male	40	66.67%
	Female	20	33.33%
Age	24 years old	1	1.67%
	22 years old	2	3.33%
	21 years old	2	3.33%
	20 years old	27	45%
	19 years old	28	46.67%

Table 3

Demographic Characteristics of ODI Coaches and Designer

Role	Gender	Age	Degree	Relevant Experience

OD Practitioner 1	Male	45	Ph. D in Organization Development	Complete the teaching intervention
OD Practitioner 2	Female	34	Ph. D in Organization Development	Complete the teaching intervention
Researcher (Designer)	Female	42	Organizational development PhD candidate	

Note: Created by the researcher (2025).

Research Instruments

This study employed a structured questionnaire to assess five key variables: self-efficacy, self-regulation, social support, psychological well-being, and academic achievement. All sections used a five-point Likert scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree"). The self-efficacy scale included five items adapted from Bandura's Self-Efficacy Scales (Bandura, 2006) and the Patterns of Adaptive Learning Scales (Midgley et al., 2000), evaluating students' beliefs in their ability to learn and succeed academically. Self-regulation was measured using items based on the Motivation Strategies for Learning Questionnaire (Pintrich et al., 1991), covering learning goals, time management, and cognitive strategies. Social support was assessed through four items adapted from the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988), focusing specifically on peer collaboration and emotional assistance. Psychological well-being was measured with five items referencing Ryff's Psychological Well-Being Inventory emphasizing purpose in life, positive interpersonal relationships, and self-acceptance. Academic achievement was assessed using a modified version of the Motivated Strategies for Learning Questionnaire (MSLQ), a five-point scale developed by Pintrich et al., (1991). The survey offered a comprehensive view of students' psychological and academic status during the intervention. In addition to quantitative measures, post-intervention qualitative data were collected through semi-structured interviews with 15 students to gain deeper insight into their learning experiences and perceptions of the ODI activities.

Reliability and Validity of Research Instrument

To ensure the content validity of the survey instrument, five experts from relevant fields—including organizational development, liberal arts, and vocational education—evaluated each questionnaire item using the Item-Objective Congruence (IOC) index. Items were rated on a three-point scale ranging from -1 (not aligned) to +1 (highly aligned), based on how well they reflected the intended construct. Most items received a full score of +1. However, Items 3, 4, and 24 received average scores of 0.60, and Item 16 scored 0.80. These items were carefully reviewed and retained after minor wording adjustments, as their content was deemed contextually relevant and conceptually appropriate. The overall results indicated satisfactory content validity across all five variables.

For reliability testing, the questionnaire was piloted among 80 students selected from a larger pool of 95 junior and graduate students enrolled in a comparable program. Internal consistency was assessed using Cronbach's alpha. All subscales exceeded the recommended threshold of 0.70, indicating high internal reliability (self-efficacy = 0.951, self-regulation = 0.960, social support = 0.939, psychological well-being = 0.942, academic achievement = 0.896) (Nunnally & Bernstein, 1994).

Table 4

Item-Objective Congruence (IOC) Results for Content Validity (n = 5 Experts)

Variable	Number of Items	IOC Score Range	Items Below 0.80	Mean IOC Score
Self-Efficacy	5	0.60 - 1.00	2(Item 3&4)	0.92
Self-Regulation	5	1.00	None	1.00
Social Support	4	1.00	None	1.00
Psychological Well-being	5	1.00	None	1.00
Academic Achievement	5	0.60 - 1.00	1(Item 24)	0.96

Table 5

Reliability results (n = 80)

Variables	Cronbach's Alpha
Self-efficacy	0. 951
Self-regulated	0 .960
Social support	0. 939
Psychological well-being	0. 942
Academic achievement	0. 896

Design and Implementation of ODI

Goal Setting Process

To support students in establishing a clear learning direction and improving self-efficacy, this intervention focused on goal-setting using the SMART framework (Doran, 1981) and the WOOP method (Oettingen, 2015). The OD practitioner facilitated lectures, case demonstrations, and group discussions to introduce the principles of Specific, Measurable, Achievable, Relevant, and Time-bound goal-setting, tailored to character design tasks. Students formulated their goals and received feedback to ensure alignment with the SMART criteria. Structured goal-setting has been shown to foster student motivation and enhance performance outcomes by promoting goal clarity and action planning (Lin et al., 2017).

In the goal-setting phase, students applied the WOOP strategy—Wish, Outcome, Obstacle, and Plan—to define their learning goals and anticipate barriers. Each student identified a personal academic wish, visualized the desired outcome, reflected on possible internal or external obstacles, and then formulated a concrete plan to overcome them. This process was facilitated through guided worksheets and in-class coaching. The method draws on the concept of mental contrasting with implementation intentions (MCII), which has been shown to enhance persistence and academic performance in young learners (Duckworth et al., 2013). During implementation, the OD practitioner monitored students' progress and provided timely feedback, while the researcher reviewed student responses and offered technical support to ensure the effectiveness of the process in promoting self-regulation and academic engagement (Bandura, 1997; Zimmerman, 2000).

Coaching Process

This coaching intervention aimed to enhance students' learning efficiency and self-regulation by providing individualized strategies tailored to their strengths and weaknesses.

Drawing on assessment results, the OD practitioner offered one-on-one guidance, workshops, and structured reflection sessions. Students with weaker skills were guided to engage in daily sketching, while those with stronger foundations were challenged with higher-level tasks. Each student set short- and long-term goals and developed plans involving peer collaboration and resource use.

During implementation, students completed tasks aligned with their personalized strategies, such as practicing equipment design or refining character poses. The OD practitioner provided real-time feedback on students' progress, helping them identify obstacles, adjust plans, and build self-management capacity. Final reflection sessions allowed students to evaluate their strategies and make continuous improvements. The researcher monitored the process and supported instructional adjustments when needed to ensure alignment with expected learning outcomes (Bandura, 1997; Zimmerman, 2000).

Team-building Process

The team-building intervention focused on enhancing students' collaborative skills through structured peer interaction, role clarification, and shared learning. Small teams were formed with designated roles such as designer, researcher, and presenter. Through case-based workshops and brainstorming sessions, students explored design directions, created outputs, and received iterative feedback to refine their work.

To foster sustainable collaboration, the OD practitioner trained peer mentors in four modules: listening and empathy, communication and conflict resolution, problem-solving, and scenario simulation. Mentors supported teams in handling emotional challenges and improving communication. Biweekly reviews between the researcher and OD practitioner ensured continuous adjustment based on observed team dynamics and outcomes. This process aimed to foster trust, shared responsibility, and enhanced project quality (Tuckman, 1965).

Positive Intervention

This intervention aimed to cultivate students' optimism, emotional resilience, and psychological well-being through guided reflection and practice. Drawing on positive psychology and mindfulness theory (Kabat-Zinn, 2005; Oettingen & Gollwitzer, 2010), the OD practitioner led a series of structured activities across four phases. First, students viewed film excerpts such as Homeless to Harvard and The Pursuit of Happiness', followed by group discussions and reflections on personal growth. In the second phase, students engaged in gratitude journaling and letter writing, reinforcing emotional awareness and positivity. The third phase introduced calming strategies, including breathing exercises and brief stress simulations, helping students develop coping mechanisms for academic pressure. Finally, students shared outcomes and received a checklist of psychological strategies for sustained practice. The intervention was monitored through facilitator observations and group feedback to ensure responsiveness to student needs and psychological engagement.

Results and Discussion

Quantitative Research Results

To examine the impact of the OD interventions on students' development, pre- and post-intervention surveys were conducted using validated instruments. Five key variables were assessed: self-efficacy, self-regulation, social support, psychological well-being, and academic achievement. Paired sample t-tests revealed significant improvements across all five variables ($p < .001$). Students reported increased confidence in handling tasks (self-efficacy), enhanced time management and learning strategies (self-regulation), greater support from peers and instructors (social support), improved emotional stability and optimism (psychological well-being), and higher levels of academic engagement and performance (academic achievement).

These results suggest that the ODI program positively influenced students' cognitive, emotional, and behavioral development.

Table 6

Results of Paired Sample t-Test

	Variables	Mean	Std.Dev	Std.Error Mean	95%Confidence Interval	T	p
Pair 1	Self-Efficacy	1.8267	0.3835	0.0495	1.7276-1.9257	36.895	< .001**
Pair 2	Self-Regulation	1.76	0.6502	0.0839	1.592 -1.928	20.967	< .001**
Pair 3	Social Support	1.8	0.63246	0.08165	1.63662-1.96338	22.045	＜.001**
Pair 4	Psychological Well-being	1.7733	0.6499	0.0839	1.6055-1.9412	21.137	＜.001**
Pair 5	Academic Achievement	1.7433	0.6228	0.0804	1.5824-1.9042	21.681	＜.001**
p<0.05p<0.01*							

The paired sample t-test results indicate statistically significant improvements in self-efficacy, self-regulation, social support, psychological well-being, and academic achievement between the pre-test and post-test. The mean differences (Post - Pre) for all five variables were positive and highly significant ($p < .001$), with self-efficacy showing the largest mean difference ($M = 1.83$, $SD = 0.38$, $t(59) = 36.90$, $p < .001$), followed by social support and psychological well-being. These results confirm the effectiveness of the ODI in enhancing students' cognitive, behavioral, social, and emotional capacities.

Table 6

Results of Research Hypotheses

Variable	Hypotheses o	Result	Hypotheses a	Result
Self-Efficacy	H1o	Rejected	H1a	Accepted
Self-Regulation	H2o	Rejected	H2a	Accepted
Social Support	H3o	Rejected	H3a	Accepted
Psychological Well-being	H4o	Rejected	H4a	Accepted
Academic Achievement	H5o	Rejected	H5a	Accepted

Qualitative Research Results

In this case study, qualitative data—including semi-structured interviews, classroom observation notes, and student reflection reports—were analyzed by the researcher using thematic analysis. The researcher independently conducted the coding and theme development process, ensuring analytic rigor through multiple data sources and reflective memo writing.

Interview Results

To better understand the effects of the intervention, qualitative responses from 12 randomly selected students were compared across five variables: self-efficacy, self-regulation, social support, psychological well-being, and academic achievement. The following case (R3) illustrates typical patterns of change as an example.

Before the intervention, R3 expressed hesitation when facing new tasks and lacked effective time management. Peer feedback was seen as unhelpful, and career goals were unclear. R3 also reported weak technical and creative skills in design work.

After the intervention, R3 gained confidence through repeated project experiences and adopted more structured planning habits. Peer discussions became more meaningful, providing useful perspectives. R3 also began to clarify career goals and showed improvement in design skills and creativity.

These patterns were common across the sample and suggest that structured support and guided learning significantly contributed to both academic progress and emotional development.

Table 7

Pre-Post Intervention Analysis for R3.

Variable	Time	Themes	Final theme
Self-Efficacy	Pre	I often feel hesitant when tackling new tasks.	Lack of confidence
	Post	After completing several design challenges, I am more confident.	Confidence enhanced
Self-Regulation	Pre	I struggle with managing my study schedule.	Ineffective time management
	Post	Using structured planning, I now complete my work on time.	Structured planning
Social Support	Pre	My peers' feedback is often shallow.	Shallow peer feedback
	Post	Team discussions now provide valuable insights.	Enhanced collaboration
Psychological Well-Being	Pre	I am uncertain about my career goals.	Career uncertainty
	Post	Through course projects, I have a clearer vision of my career.	Career clarity
Academic Achievement	Pre	My work suffers due to weak technical skills.	Limited skills
	Post	Refining techniques has improved my project outcomes.	Improved academic performance

The interview analysis revealed consistent growth across all five variables, showing that structured interventions promoted both academic and personal development. Self-efficacy: Students shifted from self-doubt to confidence. Many initially hesitated with creative tasks (e.g., "I always feel behind," R19), but later gained assurance in executing ideas ("I now confidently turn abstract ideas into visuals," R19). Self-regulation: Time management improved. Before, many lacked structure ("I rarely followed plans," R40), but post-intervention they developed consistent short- and long-term goals ("I created structured goals," R40). Social support: Peer interactions became more positive. Some students initially felt stressed by comparison

("Classmates' work stressed me out," R23), but later valued group discussions and feedback ("Discussions refined my designs," R23). Psychological well-being: Career clarity increased. Early responses showed uncertainty ("This course felt unrelated to my future," R49), while later comments reflected alignment between learning and goals ("I see how this builds toward my career," R49). Academic achievement: Technical skills and creativity improved. Students overcame frustration with tools ("I struggled with tool usage," R58) and gained efficiency through practice ("I adapted and improved," R58).

Overall, the qualitative findings highlighted clear shifts in mindset, strategy, and performance, supporting the role of intentional, well-designed interventions in vocational learning contexts.

Table 8

Summary of Pre-Post Changes

Variable		Pre-intervention	Post-intervention	Representative Changes (Selected Quotes)
1	Self-Efficacy	Low confidence, technical doubts	Gained confidence, creative growth	R4: "Lacked confidence" → "Explored advanced symmetrical forms" R12: "I did not believe I could design anything" → "Now I feel proud of my character" R28: "Always followed others" → "Started leading team sketches"
2	Self-Regulation	Poor planning, procrastination	Improved planning, time use	R19: "No plan at all" → "Set short & long goals" R5: "Kept delaying assignments" → "I now work week by week" R41: "Easily distracted" → "Use a daily checklist to stay on track"
3	Social Support	Isolation, peer pressure	Mutual support, motivation	R23: "Stress from peers" → "Inspired by peers" R15: "Felt invisible in group work" → "Now I share ideas in the team" R46: "Afraid to ask for help" → "My friends explain patiently"
4	Psychological Well-Being	Unclear goals, uncertainty	Clearer goals, stronger purpose	R49: "Course felt irrelevant" → "Want to be an illustrator" R17: "Didn't see the point of drawing" → "I enjoy practicing after class now" R31: "Felt anxious before critiques" → "Now I look forward to feedback"
5	Academic Achievement	Frustration, weak skills	Skill gains, higher satisfaction	R58: "Struggled with tools" → "Adapted through practice" R11: "Couldn't finish tasks on time" → "Now I submit everything early" R39: "My work felt basic" → "Now I try advanced compositions"

Participatory Observation Results

To assess behavioral changes before and after the ODI intervention, this study adopted a qualitative quantification method, combining structured observation with numerical scoring.

Following Sandelowski et al. (2009), "quantitizing" refers to converting qualitative data into numerical values to facilitate comparison and interpretation. Observers rated students' behaviors on a 5-point Likert scale across five key variables—Self-Efficacy, Self-Regulation, Social Support, Psychological Well-Being, and Academic Achievement—supplemented by descriptive comments. A pre-test observation established baseline behaviors, followed by a post-test observation under similar conditions, enabling measurable and contextual evaluation of student development.

Table 9

Participatory Observation Results

Evaluation criteria	Result sub-criteria	Pre-test rating	Pro-test rating
Self-Efficacy	Persistence	2.5	3.5
	Help-Seeking Behavior	2.0	4.0
	Coping Strategies	1.5	3.0
	Task Engagement	2.5	3.5
Self-Regulation	Punctuality	2.5	4.0
	Focus	2.0	4.0
	Adaptability	1.5	3.5
Social Support	Teamwork	2.0	4.0
	Communication	2.5	4.0
	Peer support	1.5	4.0
Psychological Well-Being	engagement	2.0	3.5
	Stress signs	3.0	3.5
	Sense of accomplishment	1.5	4.0
Academic Achievement	Assignment Quality	2.0	4.0
	Skill Application	2.5	4.0
	Timeliness of Submissions	1.0	3.0

The results (see Table 9) reveal significant improvements after the intervention. For Self-Efficacy, average scores for persistence, help-seeking, and coping strategies rose from 2.1 to 3.5, showing increased confidence and proactive engagement. Self-Regulation improved from 2.0 to 3.8, reflecting enhanced focus and adaptability. Social Support indicators like teamwork and communication climbed from 2.0 to 3.7, suggesting stronger peer interaction. Psychological Well-Being saw reduced stress signs and increased accomplishment (from 2.2 to 3.7), while Academic Achievement improved markedly (from 1.8 to 3.6) in assignment quality and timely submissions. These findings align with Driscoll et al., (2007), who emphasize that integrating qualitative and quantitative data strengthens the credibility and interpretability of intervention outcomes.

Content Analysis of Student Assignments

To evaluate students' cognitive development and application of design principles following the ODI, this study adopted Bloom's Taxonomy (Bloom et al., 1956) as a structured framework for assignment analysis. Six cognitive levels—memorization, understanding, application, analysis, evaluation, and creation—were assessed through both numerical scoring and qualitative observation. External evaluators, two OD experts, reviewed student submissions using a 5-point scale, offering multidisciplinary insights. Post-ODI results showed marked improvements across all levels: memorization (M = 2.0 to 3.6), understanding (2.1 to 3.8), application (2.3 to 4.0), analysis (2.4 to 4.2), evaluation (2.5 to 4.4), and creation (2.6 to 4.7). These gains reflect enhanced conceptual understanding, improved critical reflection, and

more independent artistic execution. The scoring scale was adapted from widely accepted art education rubrics, ensuring validity across originality, technical proficiency, and conceptual depth.

Observer assessments corroborated the quantitative results. Students progressed from basic recognition of design elements to intentional and research-driven creative decisions. The most significant improvements were noted in evaluation and creation, where students demonstrated deeper self-reflection and narrative integration. Observers highlighted gains in creativity, application of design principles, and presentation skills. These findings confirm the effectiveness of the intervention in fostering higher-order cognitive skills, particularly in areas aligned with self-efficacy, self-regulation, and academic achievement. By integrating structured content analysis with Bloom's framework, this study provides robust evidence of cognitive and artistic growth driven by the ODI.

Juxtaposed Quantitative and Qualitative Results at Post-ODI

This section presents a mixed-methods analysis integrating quantitative and qualitative findings to assess the impact of the Organizational Development Intervention (ODI). The data include survey-based pre- and post-ODI mean scores, along with qualitative insights from semi-structured interviews, participatory observations, and content analysis of student assignments. The analysis provides a comprehensive view of the behavioral and cognitive changes that contributed to students' development in self-efficacy, self-regulation, social support, psychological well-being, and academic achievement.

Table 10

Juxtaposed Quantitative and Qualitative Results Across Key Variables

Item	Mean in Pre-ODI Survey Data	Mean in Post-ODI Survey Data	Qualitative Changes
Self-Efficacy	2.1	3.8	Interview Findings: Many participants reported overcoming self-doubt by recognizing that newly acquired skills could be applied to future projects. Participatory Observations: Students moved from cautious experimentation to more assertive design efforts in group activities and individual consultations. Assignment Content Analysis & Bloom's Taxonomy: Final submissions reflected increased creativity and personal style (Application & Creation ≈3.2-5.0).
Self-Regulation	1.9	3.7	Interview Findings: Participants noted a shift from ad-hoc study habits to specific short- and long-term targets. Participatory Observations: Students consistently adopted structured work plans and adhered to deadlines during observed sessions. Assignment Content Analysis & Bloom's Taxonomy: Project drafts and final submissions indicated iterative planning and goal-setting (Analysis & Evaluation ≈3.3-4.5).

Item	Mean in Pre-ODI Survey Data	Mean in Post-ODI Survey Data	Qualitative Changes
Social Support	2.0	3.9	Interview Findings: Supportive peer feedback was perceived as reducing comparison-related stress and enhancing design outcomes. Participatory Observations: Increased group critiques and brainstorming sessions were observed, with peers actively seeking and offering feedback. Assignment Content Analysis & Bloom's Taxonomy: Several projects were refined through peer-reviewed revisions, demonstrating collective creativity (Analysis & Creation ≈3.3-5.0).
Psychological Well-being	1.8	3.6	Interview Findings: Many participants recognized how new skills contributed to clearer career trajectories, improving emotional resilience. Participatory Observations: Students appeared more relaxed and engaged during discussions, reflecting reduced creative anxiety. Assignment Content Analysis & Bloom's Taxonomy: Projects often integrated personal themes, indicating heightened motivation (Evaluation & Creation ≈3.5-5.0).
Academic Achievement	2.2	3.9	Interview Findings: Learners credited consistent practice and constructive critiques for improved technical and conceptual quality. Participatory Observations: More advanced tools and design methods were employed, showing growing proficiency. Assignment Content Analysis & Bloom's Taxonomy: Final submissions demonstrated deeper narrative coherence and integrated design principles effectively (Memorization → Understanding → Application ≈2.5-4.3).

Quantitative survey results indicated marked improvements in self-efficacy, self-regulation, social support, psychological well-being, and academic achievement following the ODI. These outcomes were consistently supported by qualitative evidence from semi-structured interviews, participatory observations, and assignment content analyses. Collectively, the data illustrated a transition from tentative, individualistic approaches to more confident, structured, and collaborative learning behaviors. Students expressed greater ownership over their work, benefited from peer interaction, and reported reduced creative anxiety. Such shifts highlight the value of targeted educational interventions in promoting both cognitive and emotional development. Future studies may investigate the long-term sustainability of these changes, with particular attention to how self-regulation and social

support mechanisms continue to influence higher-level artistic performance and professional readiness.

Discussion

Table 11

Discussion and Summary

Research Question (RQ)	Key Findings	Explanation	Supporting Evidence
RQ1: What is the current status of students' self-efficacy, self-regulation, social support, psychological well-being, and academic achievement?	All five variables were initially low (M < 2.5).	Students lacked confidence, planning habits, peer connection, motivation, and academic engagement.	SWOT & SOAR analysis, pre-ODI surveys, interviews
RQ2: What ODIs can be designed and implemented to enhance these five variables?	Four ODI components were developed: Goal Setting, Coaching, Team Building, Positive Psychology.	Each targeted specific variables and was designed based on Bandura (1997), Zimmerman (2000)	Literature review, intervention planning
RQ3: Are there significant differences in students' self-efficacy before and after the ODI?	Yes, significant improvement (Pre M=1.50 → Post M=3.33, p<.001).	Students gained confidence and showed persistence in class and critique activities.	Paired t-test, interviews, classroom observation
RQ4: Are there significant differences in students' self-regulation before and after the ODI?	Yes, significant improvement (Pre M=1.87 → Post M=3.63, p<.001).	Students developed better planning, time management, and learning strategies.	Paired t-test, observation rubrics, assignment planning
RQ5: Are there significant differences in students 'perceived social support before and after the ODI?	Yes, significant improvement (Pre M=1.73 → Post M=3.54, p<.001).	Peer collaboration increased, with more active group work and meaningful feedback.	Paired t-test, interviews, peer review participation
RQ6: Are there significant differences in students' psychological well-being before and after the ODI?	Yes, significant improvement (Pre M=1.72 → Post M=3.49, p<.001).	Students reported more clarity, optimism, and reduced anxiety.	Surveys, reflections, qualitative coding
RQ7: Are there significant differences in students' academic achievement before and after the ODI?	Yes, significant improvement (Pre M=1.76 → Post M=3.50, p<.001).	Final work showed stronger structure, creativity, and alignment with learning goals.	Paired t-test, Bloom's taxonomy content analysis
RQ8: How do students perceive and experience the ODI, and how do these affect change?	Students felt more motivated, supported, and empowered.	Interventions led to increased self-efficacy, planning behavior, social connection, and creative output.	Interviews, participatory observation, assignment reflection

The results from both quantitative (t-tests) and qualitative data (interviews, observations, assignments) confirm that the Organizational Development Interventions (ODIs) effectively improved students' individual creativity, team communication, knowledge sharing, team creative climate, and team creativity. This answers all research questions of the study.

Before the ODI, most students showed weak self-confidence, limited interaction, and low engagement in creative collaboration. SWOT and SOAR analyses, along with interviews, indicated that students lacked clear strategies to improve team creativity and had minimal awareness of how to share knowledge effectively. This supports RQ1, confirming a low baseline across all five variables. To address this, five targeted interventions were introduced: coaching, goal setting, dialogue, team building, and appreciative inquiry. Each aimed at a key variable. These interventions were informed by relevant literature and theory, including Amabile's creativity model (Bandura, 1997; Deci & Ryan 1985), which emphasizes the foundational role of individual creativity within organizational settings. This supports RQ2.

After the ODI, all variables showed statistically significant improvements ($p < .001$). Students became more engaged in design work, collaborated more during critiques, and developed shared goals within their teams. These results confirm RQ3 and are consistent with prior research, showing that improved communication and knowledge sharing foster collective creativity. The findings also validate view that a supportive creative climate enhances team performance when combined with psychological safety and motivation. The improved team atmosphere enabled better idea exchange, reduced isolation, and enhanced commitment to group outcomes. Based on these results, a 5-step OD model—combining the above interventions—can be recommended for sustaining creativity development in vocational art classrooms, fulfilling RQ4. This model may serve as a practical reference for similar educational contexts aiming to foster both individual and team creativity.

Conclusions and Recommendations

Conclusions

This study examined the effects of Organizational Development Interventions (ODIs) on five key variables—self-efficacy, self-regulation, social support, psychological well-being, and academic achievement—among second-year Game Design students at a vocational college in Beijing. Quantitative and qualitative data revealed that well-structured ODIs significantly improved students' academic confidence, learning strategies, peer collaboration, emotional resilience, and classroom performance. Goal-setting and coaching enhanced students' ability to manage their learning; team-based activities strengthened perceived support; and positive psychology techniques fostered greater self-reflection and mental well-being. These internal improvements translated into more meaningful engagement with coursework, better assignment quality, and stronger academic self-perception.

Recommendations

To sustain and expand the gains from the intervention, students are encouraged to continue applying goaloriented strategies, maintain time management habits, and actively participate in peer learning communities. Instructors should integrate ODI elements into course design—such as structured feedback, reflective exercises, and collaborative tasks—to support long-term learning and well-being. At the institutional level, it is recommended to promote faculty training in psychological and organizational development methods and to establish student support systems that combine academic advising, mental health services, and mentoring. These efforts will help embed developmental practices into the learning culture and extend the impact of ODIs beyond a single course or semester.

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