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Can a Failure-Focused Workshop Decouple Competence-Contingent Enjoyment? Evidence from First-Year University Students

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Abstract

Competence-contingent enjoyment refers to enjoyment that is dependent upon one's perceived competence in an activity. Whilst common, this pattern can have negative implications for achievement, engagement, and well-being. This study examined whether competence-contingent enjoyment existed in first-year university students, and whether a failure-focused workshop could reduce it. In total, 391 students participated, with 117 in the experimental group and 274 in the control group. The experimental group attended a one-hour lecture emphasising the benefits of failure, then completed a circuits session consisting of six fun, but challenging, activities (e.g., unicycling and juggling). The activities were selected to provoke failure and encourage students to decouple competence from enjoyment. The control group completed the same circuits session without any failure-based framing and received the lecture at a later date. After the circuits session, students rated their perceived competence and enjoyment for each activity. Overall, Pearson's correlations revealed strong, positive relationships between perceived competence and enjoyment in all six activities. However, the strength of this relationship did not differ between the experimental and control groups. This study is the first to establish competence-contingent enjoyment in a cohort of first-year university students, however, the decoupling intervention proved ineffective. Future research should explore design variations to support students' enjoyment regardless of competence.

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Practitioner Notes

1. Students' enjoyment correlates strongly with perceived competence, therefore, scaffold early skill development.
2. One-off "failure is beneficial" sessions are insufficient for shifting enjoyment; reinforcement is needed.
3. Pair challenging activities with debriefs so students value learning and effort beyond competence.
4. Build "safe-to-fail" conditions: multiple difficulty options, collaborations, and minimal peer comparison.
5. Monitor low-competence/low-enjoyment students and offer targeted practice opportunities and support.

Keywords

Failure, Circuits session, Experiential learning, University transition, Resilience

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Introduction

Transitioning into higher education is a significant developmental milestone that can bring substantial academic, social, and personal challenges, and is therefore a critical period for student wellbeing and persistence (Tomlinson & Killingback, 2025). During this transition, students must adapt to new expectations, navigate unfamiliar learning environments, and manage increased autonomy, all of which can shape how they experience and interpret academic success, difficulty, and failure. Recent data shows that almost 15% of first-year university students in Australia do not continue into second year (Higher Education Statistics, 2023), and that poor mental health is estimated to account for almost 1,000 dropouts annually (Zając et al., 2024). Thus, interventions which can help students successfully navigate their transition into university should increase student retention (Wilcox et al., 2005), improve academic achievement (McKenzie & Schweitzer, 2001), and enhance personal wellbeing (Duffy et al., 2020). Understandably, such interventions are not uncommon, with themes ranging from employability (Harris-Reeves et al., 2022) and care ethics (Leonard et al., 2024), to buddy-systems (Fewster-Young & Corcoran, 2023) and app-based positive psychology (Bretherton et al., 2022). To the best of our knowledge, however, no intervention has explicitly adopted a failure-focused approach – one that educates students on the development value of failure and uses experiential learning to reinforce this message. Failure, particularly relative to prior educational experiences, can be uncomfortable but is often an inevitable part of higher education (Rawle et al., 2025), as well as adult life, and therefore such an intervention may be particularly meaningful for those in their first year of university.

Literature

Theoretical Links Between Competence and Enjoyment

The idea that we enjoy things more if we are successful in them is an intuitive one, but also one that underpins many psychological theories. Self-Determination Theory (SDT), for instance, posits that intrinsic motivation – and by extension, enjoyment – is maximised when the psychological need for competence (as well as autonomy and relatedness) is met (Deci & Ryan, 1985, 2000). Achievement Goal Theory (AGT) proposes that individuals with performance-oriented goals (e.g., to win a tournament) derive enjoyment from the competence demonstrated when outperforming others (Nicholls, 1984). In Bandura's (1977) Self-Efficacy Theory, 'performance accomplishments' are the past successes of an individual in a task and are considered the most important determinant of self-efficacy, which, in turn, can influence affective responses like enjoyment (Hu et al., 2007). In Flow Theory, one of the key facilitators for flow (the psychological state associated with various positive outcomes; considered colloquially as being "in the zone") is when conditions permit a balance between challenge level and skill level (Csikszentmihalyi, 1975, 2013).

As many of these theories suggest, the cyclical or interdependent relationship between perceived competence and enjoyment can have considerable benefits to an individual when they are successful at a task. Of course, if this is the case, then the converse is also true: when an individual is unsuccessful then there are considerable detriments. When the psychological need for competence is not met, SDT proposes that there is decreased motivation, lower well-being, and reduced engagement (Howard et al., 2024). Similarly negative affective, behavioural, and cognitive responses are predicted by AGT when a performance-oriented individual fails to

outperform their competitors (Roberts et al., 2007) and by Self-Efficacy Theory when the performance accomplishments of an individual are insufficient to generate self-efficacy (Olivier et al., 2019). Given that failure is an inevitable part of life – often recurring across contexts and shaped by our own abilities and those of others – the consequences of this relationship when one is unsuccessful may be more impactful than when one succeeds. For most individuals, it is the negative side of the competence-enjoyment link that holds greater relevance and risk.

Competence-Contingent Enjoyment

Alongside the potentially maladaptive responses, other areas of psychology have also highlighted negative consequences associated with competency-driven involvement. Perfectionism, for example, is a personality trait characterised by the setting of exceedingly high standards ('perfectionistic striving') and engaging in overly critical self-evaluations ('perfectionistic concerns') (Flett & Hewitt, 2002). The trait, and in particular, perfectionistic concerns, is considered by most researchers to be a predominantly harmful one (Jowett et al., 2023), with debilitating outcomes for academic performance and well-being (Grugan et al., 2021). Similarly, fear-of-failure is the tendency to perceive evaluative situations where there is the potential for failure as threatening (Taylor et al., 2023). Fear-of-failure has also been found to predict academic performance (Caraway et al., 2003) and well-being factors such as psychological stress and burnout (Gustafsson et al., 2017). These concepts collectively support the idea that enjoyment of an activity is often closely tied to, and may depend upon, one's perceived competence in that activity. In the present study, we use the term 'competence-contingent enjoyment' as a descriptive label for this relationship between perceived competence and enjoyment, rather than as a new construct. This usage is consistent with research showing that higher self-efficacy and perceived competence are associated with greater enjoyment and positive affect during task engagement (Bandura, 1997; Csikszentmihalyi, 2013; Deci & Ryan, 2000).

Towards Interventions to Reduce Competence-Contingent Enjoyment

The findings from this broad literature base present a justifiable reason to explore interventions which can reduce competence-contingent enjoyment in individuals. This is particularly true for individuals entering new environments where the standards for success are likely to be higher than previously encountered, such as first-year university students. Research has found that the first year of university is a crucial time for students as they develop perceptions of their competency (Reason et al., 2006), which has implications on future academic engagement, retention, and success (Ribeiro et al., 2019). These competency-based judgments are especially critical as students may formulate unwarranted, negative beliefs about their ability because they are comparing themselves to new peers who likely have higher academic accomplishments than previous classmates at a high school level; a psycho-sociological phenomenon referred to as the 'Big Fish-Little Pond Effect' (Marsh & Parker, 1984). Given this increased likelihood of experiencing (relative) failure, interventions that can reduce competence-contingent enjoyment could be particularly valuable to support student engagement, performance, and well-being.

Although there is growing theoretical and empirical interest in how students interpret and respond to academic difficulty and failure, there is no work (that we are aware of) that directly treats the contingency between perceived competence and enjoyment as an explicit object of analysis. The present study addresses this gap through an experientially informed intervention that provides

low-stakes opportunities for students to experience difficulty and likely failure, coupled with structured support to reframe these experiences as normal and potentially valuable. Traditional psychoeducational interventions, which typically focus on increasing awareness and knowledge through lectures and discussions, are often criticised for their limited ecological validity (Brewer et al., 2019). The active engagement afforded by experiential methods may address such critiques and is considered essential for effective development of psychological skills (Munge et al., 2017). At the same time, in the context of experiential failure, there remains a risk that such experiences undermine competence and self-efficacy if participants do not internalise a learning-oriented perspective. However, analogous to the logic of exposure-based interventions, there is considerable evidence that safe and gradual experiences of adversity can lead to increased tolerance and more adaptive responses (Shrestha et al., 2023).

Research Questions and Hypotheses

The study had two aims: 1) identify whether competence-contingent enjoyment is present in first-year university sport and exercise science students, and 2) examine whether a workshop designed to promote the benefits of failure can reduce competence-contingent enjoyment compared to a delayed-intervention control group. This cohort was selected because the intervention was developed in partnership with teaching staff in this program and could be embedded within a compulsory first-year subject taken by the entire cohort, thereby maximising reach and ecological validity. In addition, sport and exercise science students routinely engage in skill-based and performance-oriented activities, and are therefore likely to be particularly sensitive to issues of perceived competence, public evaluation, and enjoyment in challenging tasks (Spittle et al., 2021), making them a theoretically relevant group in which to examine competence-contingent enjoyment.

The hypotheses were:

H1a. There will be significant positive correlations between perceived competence and enjoyment in the circuit activities.

H1b. There will be significant positive correlations between perceived competence and enjoyment overall when the six activities are aggregated.

H2. The competence-enjoyment relationship will be significantly weaker in the experimental group compared to the delayed-intervention control group.

Method

Design and Set-Up

A quasi-experimental between-subjects design was employed, with participants assigned via convenience sampling to either an experimental group or a delayed-control group. All participants took part in a circuits session involving six activities, after which they completed questionnaires measuring their perceived competence and enjoyment in each activity. For the experimental group, the circuits session formed the second part of a wider failure-focused workshop. For the control group the circuits session was framed as an icebreaker activity.

Participants

Participants were recruited from the 2024 and 2025 cohorts of first-year sport and exercise science students at a university in Australia. This program was chosen because the degree emphases practical, performance-oriented activities and provides a natural context for examining perceptions of competence and enjoyment. The 2024 cohort formed the experimental group and totalled 117 students, whilst the 2025 cohort formed the control group and totalled 274 students. This sample size discrepancy was due to two factors: students in the 2024 cohort being excluded (from data analysis) if they had not attended the first part of the workshop, and a general increase in student numbers in 2025. The groups were comparable in age (experimental group M = 18.8, SD = 4.1; control group M = 19.2, SD = 2.8) and gender (experimental group = 41.9% female, control group = 39.4% female). Ethical approval was obtained by the lead author's institute (ID: HEC24037).

Workshop and Procedure

The workshop consisted of two parts: a lecture and a circuits session. Both elements were designed to teach the students about the potential benefits of failure and the importance of characteristics such as resilience, grit, and a growth mindset, using a combination of interactive and experiential learning. By coupling these experiential opportunities with educational content, it was hypothesised that students would begin to reframe failure more positively, thereby weakening the association between perceived competence and enjoyment (i.e., H2). The experimental group attended the lecture one-week prior to the circuits session from which the data was collected, whilst the control group received the lecture the week after. For both groups, the workshop was a scheduled, and therefore (in theory) compulsory, part of the students' sport and exercise science course. Completion of the questionnaire was voluntary.

The circuits session lasted two hours and was situated on an indoor basketball court. Participants arrived at their scheduled class time, with most classes consisting of around 20-24 students. Each class was divided into six teams, with three or four students in each. For the experimental group, each team was assigned a team name that was deliberately ambiguous and alluded to themes of failure and resilience. Teams were challenged to work out what their designated name meant (as an additional way to promote the workshop themes) and to explain this to the rest of the class at the end of the session. For example, one team name was "Montreal '76", which references Australia's performance at the 1976 Montreal Olympics, often seen as the lowest point in the nation's Olympic history. That year, Australia secured only five medals (no gold) and ranked 32nd overall. This underwhelming result, however, led to the establishment of the Australian Institute of Sport, a key institution that has contributed significantly to Australia's sporting success in the years that followed. For the control group, teams chose their own name.

The circuits session worked in a similar fashion to that of an exercise circuit session. That is, in their teams, students engaged in an activity at one station for 10 minutes before rotating to the next station, and so on, until they had completed all six activities. The activities at each station were deliberately chosen because they were deemed fun but, more importantly, were activities that most participants would not succeed at (thus giving them an opportunity to experience failure) (see Table 1). As several stations involved physical tasks, students were instructed to self-pace their physical involvement (e.g., to manage fatigue and reduce injury risk), and staff supervision focused on safety and appropriate participation. This safeguarding was not intended to remove

the experience of difficulty, but rather, ensure the session elicited low-stakes, manageable failures. Each station contained a competitive element between the teams, designed both to motivate the students and to provide further opportunity for more concrete failure to be experienced. Scoring of the competitive element was subjective and determined (based on performance and attitude of the whole team) by a staff member who was assigned to supervise at each station, with the winning team from each class receiving chocolate as a prize (participants were informed of this in advance).

Table 1

Details of the Circuits Session Activities

Activity	Description
Unicycling	Participants were challenged to ride a unicycle as far as they could. Teamwork (via physical support) was encouraged.
Pogo-Stick	Participants were challenged to jump on a pogo-stick between a set of nine cones laid out at eight cardinal points (plus one cone in the centre).
Juggling	Participants were challenged to juggle three or four soft leather juggling sacks for as long as they could.
Brains	Participants were challenged to complete three tasks: 1) a Rubik's Cube, 2) a crossword, and 3) a Sudoku. The crossword was custom-made and involved difficult questions with hidden themes of resilience, mindset, and failure. The Sudoku was taken from the internet and had been classified as 'hard' in difficulty.
Music	Participants were challenged to play Hoagy Carmichael's 'Heart and Soul' on an electronic keyboard (sheet music provided). Teamwork (via non-playing members contributing through singing or dancing) was encouraged.
Arts	Participants were challenged to paint a replica of one of two paintings by Vincent van Gogh: either 'The Starry Night' or 'Sunflowers'.

The lecture lasted approximately 60 minutes and was designed to promote active learning and engagement with the students. It consisted of five main sections (see Table 2), with open and unstructured discussions between the lecturer and students throughout, and additional quotes embedded within the presentation to emphasise key themes.

Measures

Following the completion of all six activities, participants were provided with a link to an online questionnaire in which they were asked: 1) Please rate your enjoyment of each station on a scale from 1 ("I did not like the station at all") to 10 ("I liked the station a lot"), and 2) Please rate how well you believe you performed at each station on a scale from 1 ("I was terrible") to 10 ("I was excellent"). Each statement contained six items representing each of the activities. These ratings were collected in a time-limited session embedded within a scheduled class for the subject. In the station-by-station context, brief measures were required to minimise respondent burden. In contexts where the construct is concrete and readily understood by respondents – as can be

considered the case for competence and enjoyment in the present study – single-item measures can be preferable because of their utility, efficiency, and unambiguity (Allen et al., 2022). Research has shown single-item measures to have comparable predictive validity to multi-item measures (Bergkvist & Rossiter, 2007; Souto Castro et al., 2023). Participants were instructed to consider only their own individual performance – not that of their team.

Table 2

Details of the Lecture Activities

Activity	Description
Videos	Participants watched segments from Dr Angela Lee Duckworth's 'Grit' TED talk and NBA player Giannis Antetokounmpo's 'Failure' press conference (TED, 2013; NBA Europe, 2023).
Ball and Bucket Task	Two participants were instructed to throw five balls into a bucket in front of the class. No further instructions were given. Subsequent discussions centred around where they chose to shoot from and why, and how these decisions may relate to fear-of-failure and related concepts like resilience and mindset.
Fermi-Izing Problems	Participants were posed the question, 'How many piano tuners are there in Melbourne?' – a deliberately challenging and absurd-sounding problem. After initial guesses, they were guided through 'Fermi-izing Problems' (Tetlock & Gardner, 2015), a method that breaks complex challenges into manageable steps while reinforcing that uncertainty and mistakes are a natural part of problem-solving.
University Pre-Mortem	Participants were introduced to the 'Pre-Mortem' activity (Klein, 2007) and then, in pairs, applied it to their university experience – imagining they had failed and identifying potential reasons for that outcome.
Staff Stories	Participants heard about personal experiences of failure from eight academic staff within the SES department (approximately two-minute anecdotes; three delivered in-person and five via pre-recorded video).

Statistical Analysis

All statistical analyses were conducted using R (R Core Team, 2024). Descriptive statistics were used to summarise demographic and outcome data. Following this, Pearson's correlation coefficients were computed to examine the relationships between perceived competence and enjoyment for each of the six activities (H1a), as well as an overall relationship when the six activities are aggregated (H1b).

Given the repeated-measures nature of the dataset, linear mixed-effects models (LMMs) were employed to account for within-participant variability. LMMs are particularly well-suited for

analysing repeated measures data as they account for correlated observations within individuals while allowing for unequal sample sizes across groups (Bates et al., 2015).

To examine whether the relationship between perceived competence and enjoyment differed by group (experimental group vs. control group) within each activity, separate station-wise LMMs, as well as an overall model, were fitted (H2). Each model included fixed effects for enjoyment, group, and their interaction (enjoyment × group), with random intercepts for Participant ID to account for repeated measures within individuals. A total of seven separate models were fitted, one for each activity (Art, Brain, Juggling, Music, Pogo, and Unicycle), and one overall. This approach allowed for activity-specific estimation of the competence-enjoyment relationship and enabled comparison of model coefficients across activities.

Model assumptions were assessed through visual inspection of residual plots, including quantile-quantile (Q-Q) plots to check for normality of residuals. The interaction effect (enjoyment × group) was evaluated within each model to determine whether the relationship between perceived competence and enjoyment differed between cohorts at each activity. To address the increased risk of Type I error due to multiple comparisons across stations, false discovery rate (FDR) correction was applied using the Benjamini-Hochberg procedure (Benjamini & Hochberg, 1995).

Results

Hypothesis One: Competence-Enjoyment Correlations

Descriptive statistics and Pearson's correlation coefficient for perceived competence and enjoyment scores across the six activities (H1a) and overall (H1b) are shown in Table 3. Pearson's correlation coefficients were computed to assess the relationship between perceived competence and enjoyment for each activity. Results indicated a significant positive association across all activities, and therefore unsurprisingly, also overall ($p < .001$). This suggests that higher perceived competence was linked to greater enjoyment, therefore supporting H1a and H1b and providing evidence for competence-contingent enjoyment within the whole sample. The strength of all the correlations was considered large (Cohen, 1988), ranging from $r = 0.60$ at the Music station to $r = 0.70$ at the Juggling station.

Hypothesis Two: Group Differences in Competence-Enjoyment Relationship

LMMs were fitted separately for each activity to examine the relationship between perceived competence and enjoyment, while accounting for individual differences (random intercept for participant ID). The fixed effects estimates, confidence intervals (CIs), and p-values for each model are presented in Table 4.

Main Effects of Enjoyment and Group

Across all activities, perceived competence was a significant positive predictor of enjoyment ($p < 0.001$), with estimates ranging from 0.57 (Art) to 0.73 (Brain). This indicates that higher perceived competence was consistently associated with greater enjoyment across all activities.

The effect of group (experimental group vs. control group) was not statistically significant for most activities, except for Art ($\beta = -1.11$, 95% CI: -2.07 – -0.15, $p = 0.025$), where participants in the experimental group reported significantly higher enjoyment compared to the control group. No significant group differences were observed for the other activities, or overall.

Table 3

Perceived Competence and Enjoyment Across the Six Stations and Overall

Station	Outcome	EG *M (SD)*	CG *M (SD)*	*r* (95% CI)
Art	Perceived Competence	5.5 (2.1)	4.6 (2.4)	0.66 (0.60, 0.72) ***
	Enjoyment	7.1 (2.2)	5.7 (2.2)	
Brain	Perceived Competence	5.1 (1.9)	5.5 (2.0)	0.68 (0.63, 0.73) ***
	Enjoyment	6.5 (2.0)	6.4 (2.0)	
Juggling	Per Comp	5.3 (2.5)	5.3 (2.4)	0.70 (0.64, 0.75) ***
	Enjoyment	6.8 (2.1)	6.5 (2.1)	
Music	Perceived Competence	5.5 (2.5)	5.2 (2.0)	0.60 (0.54, 0.66) ***
	Enjoyment	6.4 (2.1)	6.9 (2.2)	
Pogo	Perceived Competence	4.4 (2.4)	4.9 (2.6)	0.68 (0.62, 0.73) ***
	Enjoyment	5.5 (2.4)	6.1 (2.5)	
Unicycle	Perceived Competence	4.7 (2.7)	4.1 (2.6)	0.65 (0.59, 0.70) ***
	Enjoyment	6.3 (2.5)	5.8 (2.5)	
Overall	Perceived Competence	5.2 (2.4)	5.0 (2.4)	0.67 (0.64, 0.69) ***
	Enjoyment	6.5 (2.2)	6.3 (2.3)	

Notes. EG = experimental group, CG = control group, M = Mean, SD = Std. Deviation. *** indicates significance at $p < .001$. Correlations were conducted with data combined across both the experimental group and control group

Interaction Between Enjoyment and Group

The interaction term (perceived competence × group) was not significant for any activity, or overall, indicating that the relationship between perceived competence and enjoyment remained stable across groups (see Figure 1). This suggests that the effect of perceived competence on enjoyment did not differ depending on whether participants received the intervention and, therefore, there was no evidence to support H2.

Random Effects and Model Fit

The intraclass correlation coefficients indicated that individual differences accounted for a moderate to high proportion of the variance in enjoyment across most activities, ranging from 0.44 (Unicycle) to 0.79 (Brain). This suggests that between-person differences contributed substantially to enjoyment levels in these activities. The variance attributed to individual differences ($\tau 00$) was highest for Pogo (2.52) and Juggling (2.22), whilst Music had no variance at the participant level ($\tau 00 = 0.00$), indicating that enjoyment responses for this activity were largely explained by fixed effects (e.g., perceived competence) rather than individual variability (e.g., trait self-efficacy or performance anxiety).

Table 4

LMMs Examining the Relationship between Perceived Competence and Enjoyment

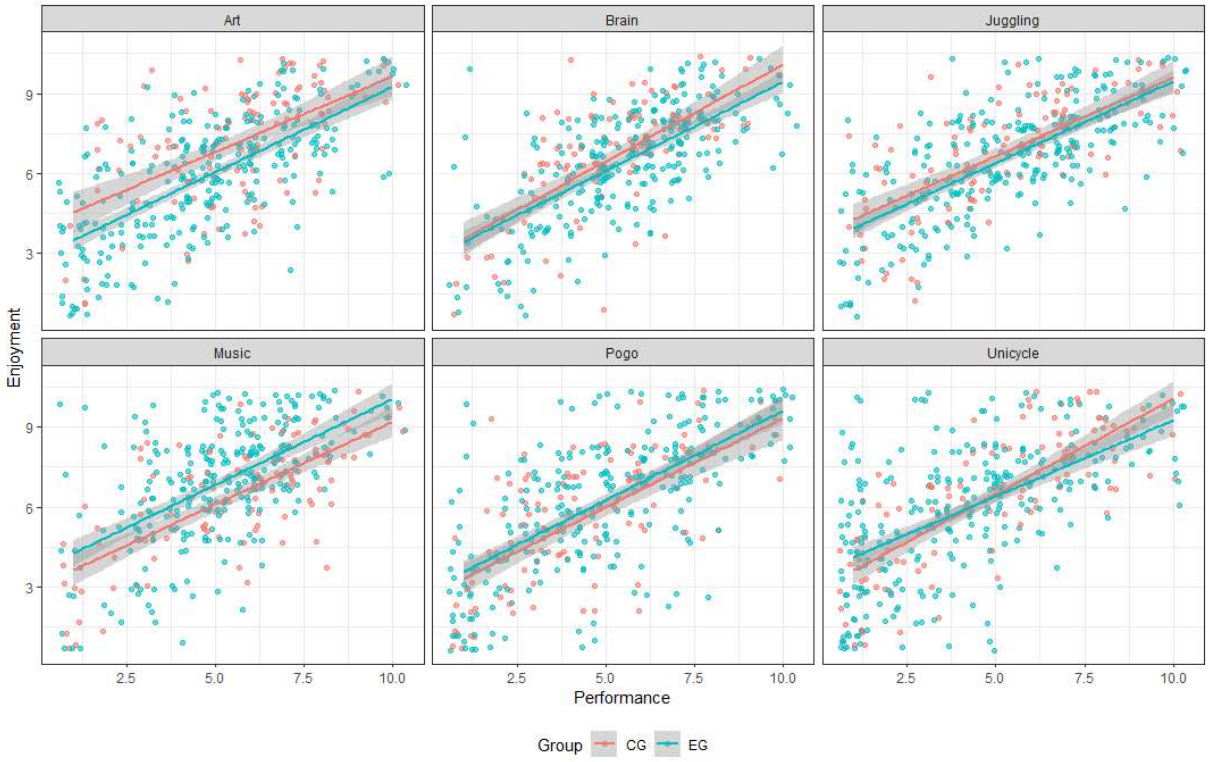
Predictors	**Art**	**Brain**	**Juggling**	**Music**	**Pogo**	**Unicycle**	**Overall**
(Intercept)	3.96 ***	2.79 ***	3.71 ***	3.02 ***	2.71 ***	2.87 ***	2.89 ***
	(3.11 – 4.81)	(2.03 – 3.55)	(3.05 – 4.36)	(2.24 – 3.79)	(2.01 – 3.41)	(2.15 – 3.59)	(2.57 – 3.21)
Per Comp	**0.57** ***	**0.73** ***	**0.59** ***	**0.62** ***	**0.66** ***	**0.72** ***	**0.70** ***
	(0.43 – 0.71)	**(0.59 – 0.86)**	**(0.48 – 0.70)**	**(0.49 – 0.74)**	**(0.52 – 0.80)**	**(0.59 – 0.85)**	**(0.64 – 0.75)**
Group [CG]	**-1.11** *	0.02	-0.39	0.6	0.2	0.7	0.21
	(-2.07 – -0.15)	(-0.90 – 0.93)	(-1.17 – 0.39)	(-0.36 – 1.57)	(-0.64 – 1.04)	(-0.14 – 1.54)	(-0.17 – 0.60)
Per Comp × Group	0.07	-0.07	0.03	0.03	0.01	-0.15	-0.05
[CG]	(-0.09 – 0.24)	(-0.23 – 0.09)	(-0.11 – 0.16)	(-0.14 – 0.19)	(-0.15 – 0.17)	(-0.31 – 0.00)	(-0.11 – 0.01)
Random Effects							
σ^2	0.99	0.45	0.75	2.6	0.85	2.19	2.28
τ_{00}	1.97 $_{ID}$	1.68 $_{ID}$	2.22 $_{ID}$	0.00 $_{ID}$	2.52 $_{ID}$	1.73 $_{ID}$	0.57 $_{ID}$
ICC	0.67	0.79	0.75	0.00	0.75	0.44	0.20
N	379 $_{ID}$	379 $_{ID}$	377 $_{ID}$	379 $_{ID}$	378 $_{ID}$	377 $_{ID}$	379 $_{ID}$

Notes. CG = control group, Per Comp = perceived competence. * denotes significance at $p < 0.05$, ** at $p < 0.01$, and *** at $p < 0.001$

The residual variance (σ^2) was highest for Music (2.6) and lowest for Brain (0.45), reflecting differences in unexplained variability across activities. These results highlight that whilst perceived competence was a strong predictor of enjoyment, additional unmeasured variables likely influenced enjoyment levels in different activities.

Figure 1

Relationship between Perceived Competence and Enjoyment for the Experimental Group and the Control Group



Discussion

The present study adopted a quasi-experimental, between-subjects design with first-year university students to examine, first, whether competence-contingent enjoyment was prevalent in the cohort (H1a; H1b), and second, whether competence-contingent enjoyment could be reduced by a failure-focused workshop that highlighted the benefits of failure and related concepts (H2). Strong evidence was found for H1a and H1b, with large, significant, positive correlations between perceived competence and enjoyment for each of the six activities and overall, indicating that competence-contingent enjoyment was present for these students. However, no support was found for H2, as LMMs revealed no significant interaction between group and enjoyment for any activity, indicating that competence-contingent enjoyment was the same regardless of whether students received the workshop or not.

Theoretically, the existence of competence-contingent enjoyment in our sample of first-year university students aligns with many frameworks within psychology (e.g., SDT, AGT, Self-Efficacy, and Flow). It also supports empirical evidence that has demonstrated the important

relationship between perceived competence and enjoyment in the areas of child and adolescent physical education (Carcamo-Oyarzun et al., 2023; Saiz-Gonzalez et al., 2025), recreational youth sport (McCarthy et al., 2008), elite youth sport (Jakkola et al., 2016), and college student physical activity (Guan et al., 2023). Our work extends this literature by explicitly establishing strong competence-enjoyment associations across both physical and non-physical activities within a first-year university curriculum, with the art, brain, and music stations providing novel evidence in cognitively and creatively oriented tasks. In combination with the results of our LMMs, these findings suggest that perceiving oneself as competent may operate as a relatively robust gateway to enjoyment across diverse learning experiences in higher education, and may not be easily shifted by a brief, one-off intervention. This interpretation is consistent with research on psychological and social interventions, which indicates that such programs are more likely to show lasting change when they are longer, spaced out, and reinforced within supportive learning environments (Hecht et al., 2021; Lacerenza et al., 2017; Sin & Lyubomirsky, 2009). Such findings are important as they have implications for how learning activities – particularly those involving cognitive and creative challenges – are designed and framed in similar low-stakes, experiential contexts, as students' enjoyment may still depend heavily on how competent they feel. However, extending these implications to higher-stakes academic settings, where performance is formally evaluated and comparison with peers is more salient, requires caution.

Although the positive association between perceived competence and enjoyment is intuitively plausible and is consistent with prior theory, there is limited work that directly operationalises and tests the strength of this coupling in authentic higher-education learning contexts. Our contribution is therefore not to claim novelty in the *direction* of the relationship, but to provide an empirical demonstration of its robustness and generality in a real curricular setting, and to introduce the descriptive term 'competence-contingent enjoyment' as a concise label for this pattern. Importantly, the null moderation finding (H2) is also theoretically informative: it suggests that competence-contingent enjoyment may be resilient to brief framing interventions, implying that shifting students' affective responses to low competence may require greater intensity, duration, and/or repeated practice opportunities. Together, these findings sharpen theoretical expectations about when and how failure-focused pedagogy might influence enjoyment.

Several reasons may explain the non-significant perceived competence x group interaction found by our LMMs (i.e., the inability of our workshop to reduce competence-contingent enjoyment). First, it is possible that competence-contingent enjoyment is such a deeply rooted belief that a single workshop may not have been sufficient to override years of socialisation around success and enjoyment. This tentative explanation warrants examination and is consistent with the strong predictive effect of perceived competence on enjoyment (Table 4) and positive correlations between perceived competence and enjoyment for the control group (Figure 1). AGT suggests that shifting from a performance-oriented mindset to a mastery-oriented one takes time and reinforcement (Chazan et al., 2021), and this may be especially true for our cohort given that they were sport and exercise science students, and therefore more likely to have grown up within various sporting contexts where the societal influence on competence-contingent enjoyment is particularly visible. Accordingly, a multi-session workshop delivered over a longer period, with repeated opportunities to revisit these ideas and measure competence-contingent enjoyment longitudinally, may prove more effective. A further possibility is measurement sensitivity. Although single-item measures can be valid in appropriate contexts (Allen et al., 2022; Bergkvist & Rossiter,

2007; Souto Castro et al., 2023), they provide less precision than multi-item scales and do not allow internal consistency to be estimated. Interaction effects are typically small, and reduced measurement sensitivity can further attenuate interaction terms and associated power (Aguinis et al., 2005). Accordingly, it is possible that any small workshop-related change in the competence-contingent enjoyment relationship was difficult to detect with single-item indicators.

The ineffectiveness of our workshop to reduce competence-contingent enjoyment may also be related to the circuit-style nature of the activities that meant students did not have the opportunity immediately after each station to reflect upon their experiences through a positive failure-based lens. Even a one-minute debrief may have helped in allowing students the time to reinterpret their failures and decouple enjoyment from competence. This aligns with experiential learning models which emphasise that structured reflection or debriefing is a critical stage in consolidating learning from hands-on activities and making sense of challenging experiences (Kolb, 1984). Thus, it may be that the effects of the workshop are delayed, emerging over time only when students have had a chance to process and reflect on their experiences. Were the questionnaires to be completed later, different results may have been found. Another explanation could relate to the short timeframe (10 minutes at each station) and competitive, team element of the circuits session. With these factors considered, it is reasonable that some students may have viewed the stations as performance-based tasks, where success and public demonstration of ability were still central. This may have undermined our attempts to present failure as a normal and constructive part of learning and reinforced an ability-oriented focus for some students. Finally, the workshop aimed to emphasise the benefits of failure, but of equal focus was educating the students on the importance of resilience and grit. A potential unintended consequence of this is that, rather than breaking the link between competence and enjoyment, students may have reframed competence as resilience and maintained the same underlying mechanism. Such reframing would be understandable given the popular discourse within educational settings explicitly associating resilience with academic success (Tewell, 2020). If students viewed resilience as a proxy for competence, competence-contingent enjoyment would still emerge, just under a different conceptual label. It is important to note, however, that these explanations are speculative and therefore warrant systematic investigation.

With these points in mind, future iterations of the workshop might consider making the following adjustments: 1) longer exposure, with longitudinal measurements taken, 2) inclusion of one-minute reflection debriefs after each station, and 3) explicitly framing the competition aspect around attitude and resilience, rather than performance. Future work should also include a qualitative measurement that explores in more detail how participants are defining success. Outside of the workshop, research is needed which tracks competence-contingent enjoyment over time in individuals (particularly children) across various domains. Whilst we have proposed – based on a large body of literature – that competence-contingent enjoyment can have significant negative outcomes, evidence for this in terms of academic underachievement and disengagement or drop-out from other activities (such as sport and exercise) over time is needed before resources can be confidently spent on exploring ways to reduce it. Of course, the individualisation of such workshops would need to be considered, given that competence-contingent enjoyment may have positive benefits for some people.

Practically, the findings of our study should be used to raise awareness with educators, coaches, and others with pedagogical roles as to the prevalence of competence-contingent enjoyment and

its potential consequences for engagement. Empirical evidence establishing this relationship can provide the basis for targeted strategies that help practitioners design more inclusive and motivating learning environments, particularly those that scaffold early skill development in ways that protect enjoyment. The novelty of the activities for most students reflects the nature of early learning experiences in educational settings, and it is therefore essential that practitioners consider the challenge level and framing of tasks, ensuring that they are pitched appropriately and explicitly presented as opportunities to experiment and make mistakes rather than as tests of fixed ability. Doing so can enhance students' enjoyment and, over time, support sustained motivation and ongoing participation in the activities in question. In addition, student support systems – such as academic advising, tutoring, and mentoring programmes – could draw on the notion of competence-contingent enjoyment when working with students who report low enjoyment or disengagement, helping them to reinterpret early difficulties and failures as part of the learning process, rather than as evidence that they do not belong in their chosen course.

A major strength of this study is its real-world implementation within a university curriculum, ensuring that the experimental group engaged with the workshop in a natural learning environment rather than an artificial laboratory setting. This ecological validity enhances the applicability of the findings; however, it also introduces methodological challenges that warrant acknowledging. First, participants could not be fully randomised. The non-equivalent groups mean that we cannot rule out the possibility that inherent differences between the experimental group (students from the 2024 cohort) and the control group (students from the 2025 cohort) influenced the results. Whilst both cohorts met the same university entry-level requirements and were comparable in gender and age, other unmeasured factors may have contributed to the findings. For instance, the two cohorts may have differed in baseline self-efficacy or ability beliefs, which could have shaped how they responded to both the workshop and the activities and, in turn, affected the results. In addition, enjoyment and perceived competence were assessed only once, immediately after the circuits session. A baseline measure of competence-contingent enjoyment was not included because the outcomes were deliberately task-specific and the activities were intentionally unfamiliar. Any meaningful ratings would have required prior exposure to each activity (or extensive instruction) and added survey burden, whilst also risking priming performance concerns that the study sought to examine. Nevertheless, this limits internal validity for H2 because pre-existing cohort differences cannot be ruled out. Despite this limitation, the findings remain meaningful because they provide a robust, ecologically valid estimate of competence-enjoyment coupling at the point of task engagement, demonstrated consistently across six diverse activities and in the aggregated data.

A second methodological challenge is that the study could not fully control participant experiences within each circuits session. Some students may have participated with friends whilst others may have worked with unfamiliar teammates. Similarly, the staff overseeing each station varied. These factors may have influenced enjoyment beyond one's actual engagement at each station (Wallhead et al., 2013). Moreover, as alluded to earlier, the sample comprised first-year sport and exercise science students, who may already have strong performance-oriented mindsets due to their exposure to competitive sport. Finally, the circuits activities were intentionally designed as low-stakes tasks that did not contribute to students' grades, scholarships, or progression and did not involve formal academic comparison with peers. This ethically appropriate low-stakes scaffolding may have reduced the intensity of discomfort typically associated with higher-stakes

academic failure. As such, we cannot assume the same results would apply to contexts in which students are dealing with ongoing, high-stakes academic failures, or generalise to other populations in which performance-based evaluations are less prevalent; workshops tailored to other programmes/courses may produce different results (Tomlinson & Killingback, 2025).

Conclusion

Competence-contingent enjoyment refers to the idea that one's enjoyment of an activity is dependent upon their perceived competence in that activity. Both theoretical and empirical literature suggests that competence-contingent enjoyment might have negative long-term outcomes for most people. The present study has established evidence of competence-contingent enjoyment within a sample of first-year university students, however, the failure-focused workshop – designed to reduce this effect by promoting the benefits of failure through both education and experiential learning – was unsuccessful in doing so. Given the novelty of the workshop, future research should look to examine variations on its design, as well as its effect on non-sports-based participants. Such work could be important in optimising the learning experiences of individuals to maintain enjoyment irrespective of competence, which in turn, may have a positive impact on engagement, achievement, and well-being.

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