# Greater Realism in Authentic Assessments Promotes Student Motivation and Engagement

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## Abstract

Student motivation is an important predictor of both performance and attitudes toward schoolwork. Higher levels of intrinsic, or autonomous, motivation are facilitated by high-impact teaching practices, including experiential learning and using authentic experiences and evaluations. The present study was inspired by instructor perception that students in their third semester in a four-year undergraduate design program were more engaged with, and more motivated by, one course project over another. Although both projects were authentic assessments, the preferred project had more realism, including real external stakeholders and context. We assessed students' subjective experience while working with two projects taught in the same course over two years, where the projects varied in level of realism. Phase 1 of the study measured students' intrinsic motivation for the two projects using a questionnaire based on the Intrinsic Motivation Inventory. Phase 2 of the study again measured students' intrinsic motivation for the two projects after the less-preferred project was adjusted to be more realistic. This study showed evidence that students experienced higher levels of engagement and intrinsic motivation when working with more realistic projects involving real external stakeholders and context, compared to a project with less realism. Projects with real problems, goals, and outcomes seem to give students a higher sense of autonomy, competence, and relatedness than fictitious ones—improving their self-regulation, engagement, and well-being.

Keywords: student engagement, motivation, authentic assessment, high-impact practices, experiential learning, design studies

## Introduction

Student engagement is essential to academic achievement and overall well-being (Davis et al., 2012; Kuh, 2008; Ryan & Deci, 2017; Schunk et al., 2014). The common themes of competence, value, and social interaction can be found at the intersection of the various theories that explain what propels people's motivation to learn namely: expectancy-value, attribution, social-cognitive, goal orientation, and self-determination theories (Cook & Artino, 2016). Students who are self-motivated and engaged in their studies have accepted and internalized the values embedded in the learning, feel competent as a contributing member of society, and achieve higher academic success (Ryan & Deci, 2017).

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Although there are personal variables that predict student engagement (Tani et al., 2021), student engagement depends heavily on the learning environment. The quality of students' participation and interactions in the classroom, as well as their psychological investment in the learning process, will affect their motivation (Davis et al., 2012). Students' academic relationships with other students, and with teachers, are correlated with their overall engagement and with perceived workload (Xerri et al., 2018). In a controlling and unsupportive learning environment, a student will feel unmotivated, passive, and ineffective, leading to disengagement and even attrition. In contrast, in a supportive learning environment that offers opportunities for diverse and independent work, students will feel empowered, respected, supported, and more willing to accept, internalize, and integrate external values such as learning goals (Ryan & Deci, 2017).

The present study was designed to explore students' engagement with assessments that varied in "realism." From anecdotal student reports about their attitudes and experiences associated with two class projects, the first author decided to systematically evaluate student motivation in relation to those projects. Both projects were designed as authentic assessments such that the projects replicated tasks that are consistent with the professional work of a designer (e.g., Villarroel et al., 2018), but the projects differed in their respective levels of realism or context authenticity (Bozalek et al., 2013). One design project (Album) had input from client stakeholders (musician and record label) prior to completion, and the products of the assignment (album cover and package) were presented to those stakeholders for evaluation (in addition to being graded as a component of the course). All student products were in a competition where the winning work was produced commercially. The other project (Book) was a simulated design project connected to a campus event with an author, but the author did not provide any input to the class. The products of the assignment (posters) were displayed for the author months after the course was completed, but there was no author evaluation or feedback on the finished works.

Across several terms, students had expressed more enthusiasm for the more realistic project. Their instructor wondered whether the influence of the stakeholder was a key factor in different attitudes to the two projects and whether those attitudes reflected differences in measurable motivation. We predicted (Hypothesis 1) that student responses would express greater intrinsic motivation associated with the Album project, because it was more realistic. After data were collected and analyzed for the first year of the study, a second phase was added to test whether adding involvement of a stakeholder would change student attitudes toward the initially less-preferred project (Book). We predicted (Hypothesis 2) that the inclusion of more realism in the Book project in 2020 would be associated with greater intrinsic motivation among students, compared to the responses to the Book project in 2019. The two hypotheses were supported with both quantitative and qualitative analyses of student feedback, suggesting that the involvement of a stakeholder strengthened multiple aspects of intrinsic motivation.

## Literature Review

### *Self-determination theory*

Davis and colleagues (2012) argue that to understand student motivation in the classroom, "teachers need to think about engagement as encompassing three interconnected dimensions: behavioral engagement, cognitive engagement, and relational engagement," concluding that the latter "promotes optimal engagement in school" (p. 21). Relational engagement enhances engagement in academic work, and thus predicts academic success (Ganotice & King, 2014) as well as students' perceptions of effort or workload (Xerri et al., 2018). One of the theories that offers a thorough understanding of how the relational component fuels motivation in students is self-determination theory (Deci & Ryan, 2000; Ryan & Deci, 2000).

Self-determination theory (SDT) focuses on the intrinsic propensities of humans to engage in an activity without the need for an outside incentive or pressure to do it; self-motivated people engage because they find the activity enjoyable or interesting (Ryan & Deci, 2017). For people to feel motivated they need to fulfill three basic psychological needs: competence—an individual's basic need to feel efficacy and mastery; autonomy—the feelings of volition and harmony with an individual's interests and values; and relatedness—the feelings of being cared for by others, of belonging, and of being a contributing member of a social group. Relatedness, too, plays a significant role in the internalization of external motivators, such as learning goals, values, and outcomes. An individual will be more willing to accept external values if it helps them connect with a specific social group they respect (Ryan & Deci, 2017).

### *Intrinsic and extrinsic motivation*

Ryan and Deci (2000) have also described the complex interactions between extrinsic and intrinsic motivation. They are not opposite ends of a spectrum, nor binary states, but rather they can simultaneously affect each other to effect behaviour. While there are examples of purely intrinsic motivation where the work itself is the reward, most of the work we do in an average day is not so pure and has both intrinsic and extrinsic influences. Actions can be categorized as being relatively autonomous (meaning that there is a significant amount of intrinsic motivation) or relatively controlled (meaning that there is a significant amount of external motivation imposed on the situation). It is useful to categorize schoolwork in terms of the *relative* amount of intrinsic motivation and thus, the degree of autonomy. Highly controlled environments tend to have poorer educational outcomes, whereas more autonomous environments have better educational outcomes (Ryan & Deci, 2017). For example, a student may complete a project that has external consequences (like grades) but perceive that the project is interesting, worthwhile, and their hard work is necessary. Thus, they have internalized the locus of causality for that project and have internalized the values associated with it. It is perceived as more worthy of effort, or is more enjoyable, than another project that has an equal external grade value. This internalized external motivation, along with intrinsic motivation, is considered autonomous motivation even though it includes external consequences (Deci et al., 2017) and is associated with long-term success and well-being (Ryan & Deci, 2017).

These differences in autonomous motivation will influence where students direct their efforts among their various educational tasks and may influence whether they persist in working toward their educational goals rather than some other source of motivation. Higher levels of intrinsic motivation for schoolwork are associated with greater interest and enjoyment, as well

as higher levels of effort (Ryan & Connell, 1989) and, importantly, are associated with higher-quality learning (Grolnick & Ryan, 1997). The use of assessments that are consistent with greater autonomous motivation leads to a lower likelihood that students will commit academic dishonesty (see Lang, 2013 for a review). In the workplace, jobs that facilitate autonomous motivation are associated with lower likelihood of burnout or exhaustion and more sharing of knowledge among colleagues (Deci et al., 2017).

Authentic, realistic projects in the classroom can be successful at motivating students because they facilitate the fulfillment of three basic psychological needs: competence, autonomy, and relatedness (Alger et al., 2021; Ryan & Deci, 2000). Consistent with self-determination theory, an educational environment that ensures success is attainable and where students feel effective (competence); offers choice, encourages autonomous actions, and aligns with students interests and values (autonomy); and promotes a sense of belonging, being cared for by others, and being a contributing member of a social group (relatedness) will lead to self-motivated actions and consequently to engagement and deeper learning (Ryan & Deci, 2000).

*Experiential learning and high-impact educational practices*

Students often learn best by doing, by working with content that matters to them, so they can make a real mark on the world. Experiential learning is defined as a high-impact student-centred educational approach where students learn from direct experience with issues and problems in the community, while the teacher provides minimum assistance to ensure their success (Alger et al., 2021; Chapman et al., 1995; Kuh, 2008). Experiential learning engages students in activities that are relevant to them—it helps them make connections between theory and practice, takes them outside of their comfort zones, and enables them to make meaningful relationships, all while encouraging a deeper emotional investment and reflection (Schwartz, 2012).

High-impact educational practices (HIEPs) are instructional strategies that foster knowledge, skills, personal growth, and self-direction beyond what the core curriculum imparts (Kuh, 2008). According to Kuh, practices that focus on broader learning outcomes—including transferable skills and real-world applications—are successful in engaging students in deeper learning, helping in student retention, and in turn, helping graduates succeed in an ever-changing economical and societal context. In particular, students from marginalized groups seem to benefit dramatically from these experiences. Engaging in HIEPs helps minimize performance gaps associated with a variety of educational impediments. It is important to note that most HIEPs provide opportunities for students to interact in meaningful ways with experts, such as instructors or teaching assistants, peer tutors, community partners, or clients. The personal interactions facilitate personal development in a way that course content does not (Kuh, 2008; Ryan & Deci, 2017; Schneider, 2008).

Despite the recognized value of HIEPs in education, these activities are often implemented outside of the “regular” classroom as unpaid internships, study abroad, or participation in research projects. Many students are unable to access such opportunities, often because of financial barriers, conflicts with employment, or familial obligations (Morton et al., 2018; Stroud, 2010). Thus, high-impact educational experiences may be disproportionately available to already-privileged students. The inclusion of authentic projects in the undergraduate classroom is one way to embed experiential learning into the curriculum, thus opening equal

access to all students and removing some of the barriers associated with finances, skill, and other commitments or obligations (Coker & Porter, 2015; Kuh, 2008).

*Authentic assessment*

Authentic assessments immerse students in performing real tasks to solve real-world problems as a professional in the field would do (Wiggins, 1993). Mueller (2024) discusses the advantages of authentic assessments over traditional assessments by looking at the following attributes: students perform a task instead of selecting a response; the context for the task is real instead of contrived; there is construction and/or application of knowledge instead of recall/recognition; it is student-structured instead of teacher-structured; and the result shows direct evidence of application and/or construction of new knowledge.

Authentic assessments are common practice in design education. Real-world design problems are replicated via hands-on projects that emulate the steps a professional designer would take to solve a problem (e.g., Villarroel et al., 2018). Professional designers identify challenges in everyday activities and then propose a solution to improve or facilitate people's daily tasks. To ensure that the finished product is successful, designers involve clients and users in the process of finding the best solution that will address their needs (Stone, 2010).

Authentic assessments in the design classroom vary in their level of instructor control and their realism. Realism, or contextual authenticity (e.g., Bozalek et al., 2013), refers to the relative presence of real-world situations, collaborators, stakeholders, or consequences. Typically—and due to the complexity of working with external partners—these simulated design projects do not involve real clients and users, thus diminishing the impact these experiences have on students (Grant, 2014). While contrived problems can provide a viable way for students to hone their problem-solving skills, the emotional investment and motivation overall are not as high as when the problem is "real." Being fully immersed in the experience engages students in more memorable experiences that ensure deeper learning (Schwartz, 2012).

When there is no real client or outcome, the grade is the only tool for students to gauge their success and competence. Despite grading being a necessity in post-secondary education, evaluations have negative effects on student motivation. Further, the notion that the fear of receiving a low grade will motivate students to do better has been refuted. According to Ryan and Deci (2017), "…grades by themselves typically provide little competence-relevant feedback. They merely let students know where they stand relative to others, and that focus can deter them from wanting to learn rather than facilitate greater effort or interest" (p. 371).

A study by Benware and Deci (1984) showed that students perform better when they study for real-life application rather than for a test. Students who prepared to put their knowledge to use had deeper conceptualizations than the ones who studied for an exam. Additionally, students who studied for the test found the material less interesting. Together, these results are consistent with evidence about the relationship between motivation and performance and suggest that both task authenticity and realism (or contextual authenticity) can play a role in intrinsic or autonomous motivation.

## Methods

The study was conducted in the Faculty of Fine Arts at an undergraduate university in western Canada. All methods were approved by the university research ethics board prior to implementation. Students enrolled in a second-year typography course in the four-year Bachelor of Design program were invited to participate in the study. We did not collect demographic data to avoid identifying details about individual participants and because we had no hypotheses associated with demographic variables. The study compared two in-class projects: "[RECORD LABEL] Album Cover" (Album) and "[UNIVERSITY] Book of the Year Design Series" (Book). The study was conducted in two phases.

### Phase 1

The first phase, conducted in the Fall term of 2019 (September to December), compared a realistic project (Album) with a simulated project (Book).

*Album project*

This was an experiential project that involved real stakeholders with a real design problem to solve. In the Album project, students collectively interviewed a musician with a record label as the client. In a competition with their classmates for the "best" design, each student designed a music album cover and package and presented their design to the client. The winning design concept was produced commercially.

*Book project*

This was a simulated project with a fictitious design problem to solve with a set outcome (poster series), without the involvement of external stakeholders. In the Book project, students read a book—chosen by the university each year—and designed a poster series to convey the concepts found in the book. An exhibit of the best student results was displayed on campus months after the completion of the project. Students had no contact with the author for the duration of the project.

### Phase 2

The second phase, conducted in the Fall term of 2020 (September to December), compared the same experiential project (Album) with an altered Book project with added experiential components. Additionally, Phase 2 differed from Phase 1 in terms of the modality of instruction due to the pandemic. All interactions among students, instructors, and stakeholders occurred online rather than in person.

*Album project*

This project was identical to the one in 2019, except with a new musician as the stakeholder.

*Book project*

This project was changed to include greater realism. The new version of the Book project consisted of a fictitious design problem to solve, but with an open outcome. The product could be a poster or some other design product—of the student's choice—that would function as marketing for the book. It also involved a real stakeholder, the author of the book. Students interviewed the author at the start of the project and presented results back to the author at the end of the project. An exhibition of the best student results was displayed online.

## Materials

The study was designed as a concurrent mixed-methods design for the purpose of methodological complementarity. Because this is an exploratory study with a relatively small sample size, we wanted to use methods that would complement each other and provide elaboration or clarity for items associated with our hypotheses (consistent with Thierbach et al., 2020). We administered an anonymous survey questionnaire, which included quantitative rating scales and qualitative open-ended questions, after the completion of each of two in-class projects (Album and Book) in both years (2019 and 2020). A consent form was handed out in class (on paper in 2019 and electronically in 2020) a week before the start of the study. Out of 37 students enrolled in the course in 2019, 21 students consented to take part in the questionnaire for Album and 26 students took part for Book. In 2020, out of 54 students enrolled in the course, 23 students participated in the questionnaire for Album, and 17 students participated for Book.

The survey questionnaire in this study included an adaptation of the Intrinsic Motivation Inventory (IMI) (Center for Self-Determination Theory, n.d.) used to assess participants' subjective experiences related to each of the projects. The survey contained 30 questions from a set of seven subscales.

The subscales are intended to measure different factors in relation to intrinsic motivation (IM), as follows:

- *interest/enjoyment* is considered to be the key self-report measure of IM
- *perceived competence* is a positive predictor of IM, reflecting skill at the task
- *perceived choice* is a positive predictor of IM, reflecting autonomy in the task
- *pressure/tension* is a negative predictor of IM, reflecting anxiety associated with the task
- *effort/importance* is a positive predictor of IM, reflecting amount of work on the task
- *value/usefulness* is a positive predictor of IM, reflecting student attitudes about whether the task is worthwhile
- *relatedness* can be a positive predictor of IM, reflecting feelings of closeness to peers or instructor, and sense of community

(Center for Self-Determination Theory, n.d.)

Note that the scale in this study is presented as a 5-point Likert scale, instead of the original 7-point Likert scale of the IMI. Subscale averages should not be directly compared against other studies using the same scale. Some survey items required reverse coding prior to statistical analysis, consistent with procedures described in the handbook for the IMI. Ratings data were analyzed without further transformations.

The survey also included three open-response questions so that students had the opportunity to expand on their feedback about the two projects. The questions addressed issues relating to real design problems versus simulated design problems, processes, and challenges while working with music (Album) or literature (Book) and the preparedness and pressure levels associated with their final presentations. Please see the Appendix for the specific survey items presented to student participants.

## Results

### *Quantitative analysis*

A multivariate analysis of variance was conducted, using Project (either Album or Book) and Year (2019 or 2020) as the fixed factors, with each subscale as a dependent variable (see Table 1 and Figure 1). Using a significance level of 0.05, there was only one significant main effect of Project on the Value subscale ($F = 4.96$, $p = .029$, $\eta_P^2 = .057$). There were three main effects of Year: Interest/Enjoyment was higher in 2020 ($F = 14.37$, $p < .001$, $\eta_P^2 = .149$), Perceived Choice was higher in 2020 ($F = 14.40$, $p < .001$, $\eta_P^2 = .149$), and Perceived Tension was higher in 2019 ($F = 9.51$, $p = .003$, $\eta_P^2 = .104$). None of these main effects are meaningful, however, considering the significant interaction effects (all statistics listed in Table 1). Student responses to the Album project did not change significantly from year to year, but student responses to the Book project were significantly more positive in 2020 after it changed to include a real stakeholder and an open outcome. For each significant interaction, effect sizes were intermediate or large. Representative interactions are presented in Figures 2a and 2b. Only one subscale (Effort/Importance) revealed no significant difference in student ratings between the two projects or across years.

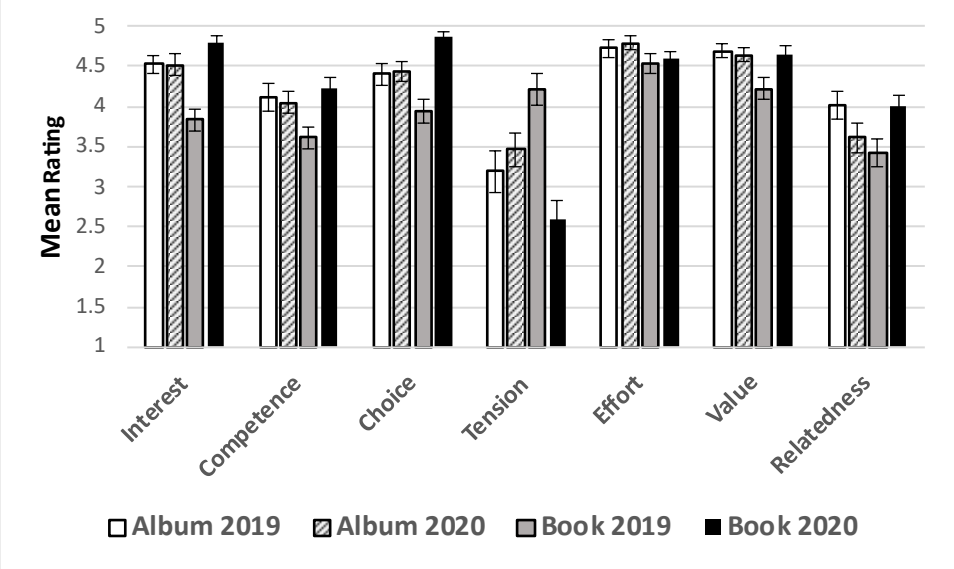
*Table 1. Interaction effects for student responses to the Intrinsic Motivation Inventory for the two projects in the same Design course across two years*

| Subscale | Mean/SEM | *F* | *p* | $\eta_P^2$ |
|---|---|---|---|---|
| Interest/Enjoyment | Album2019 = 4.53 ± 0.11<br>Book2019 = 3.83 ± 0.14<br>Album2020 = 4.52 ± 0.14<br>Book2020 = 4.8 ± 0.09 | 14.87 | < 0.001 | 0.154** |
| Perceived Competence | Album2019 = 4.11 ± 0.17<br>Book2019 = 3.61 ± 0.14<br>Album2020 = 4.05 ± 0.14<br>Book2020 = 4.22 ± 0.13 | 5.21 | 0.025 | 0.060* |
| Perceived Choice | Album2019 = 4.40 ± 0.13<br>Book2019 = 3.94 ± 0.14<br>Album2020 = 4.44 ± 0.13<br>Book2020 = 4.87 ± 0.08 | 12.01 | 0.001 | 0.128* |
| Pressure/Tension | Album2019 = 3.19 ± 0.26<br>Book2019 = 4.21 ± 0.19<br>Album2020 = 3.46 ± 0.21<br>Book2020 = 2.59 ± 0.24 | 18.57 | < 0.001 | 0.185** |

| Subscale | Mean/SEM | *F* | *p* | $\eta_P^2$ |
|---|---|---|---|---|
| Effort/Importance | Album2019 = 4.73 ± 0.11<br>Book2019 = 4.54 ± 0.13<br>Album2020 = 4.79 ± 0.08<br>Book2020 = 4.59 ± 0.10 | 0.08 | 0.930 | <0.001 |
| Value/Usefulness | Album2019 = 4.69 ± 0.08<br>Book2019 = 4.22 ± 0.13<br>Album2020 = 4.64 ± 0.09<br>Book2020 = 4.65 ± 0.10 | 5.21 | 0.025 | 0.060* |
| Relatedness | Album2019 = 4.01 ± 0.17<br>Book2019 = 3.42 ± 0.17<br>Album2020 = 3.61 ± 0.19<br>Book2020 = 4.00 ± 0.14 | 7.83 | 0.006 | 0.087* |

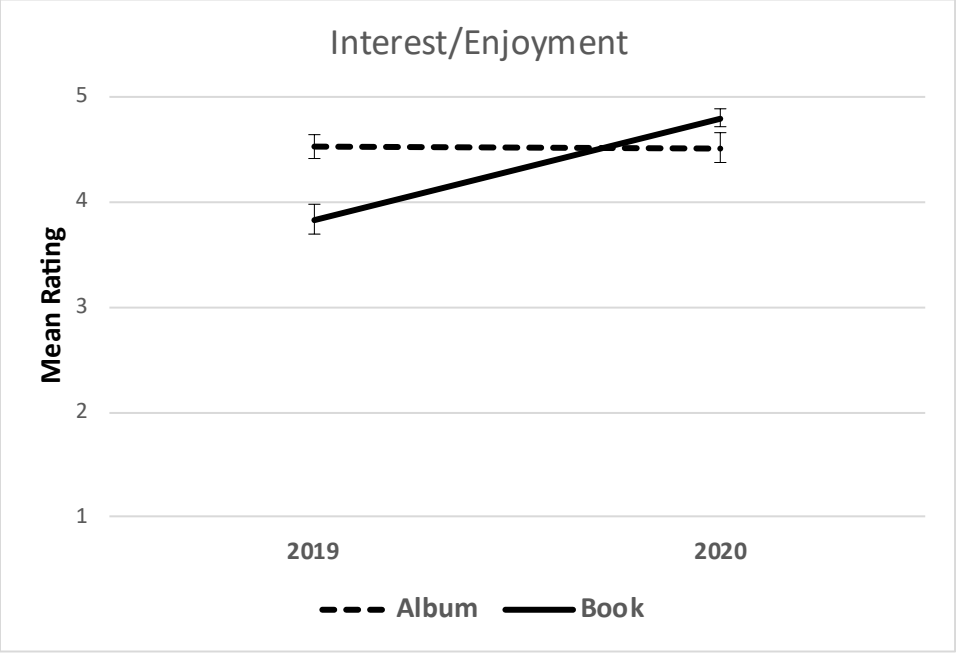
*Note*: The Book project changed from a simulated stakeholder to a real stakeholder in 2020. The Album project did not change. All subscales positively predict intrinsic motivation except for the Pressure/Tension subscale, which negatively predicts intrinsic motivation. Effect sizes were calculated using partial Eta squared (ηP2). Medium* and large** effect sizes are noted.

*Figure 1. Mean differences in student responses to the Intrinsic Motivation Inventory for the two projects in the same Design course across two years*



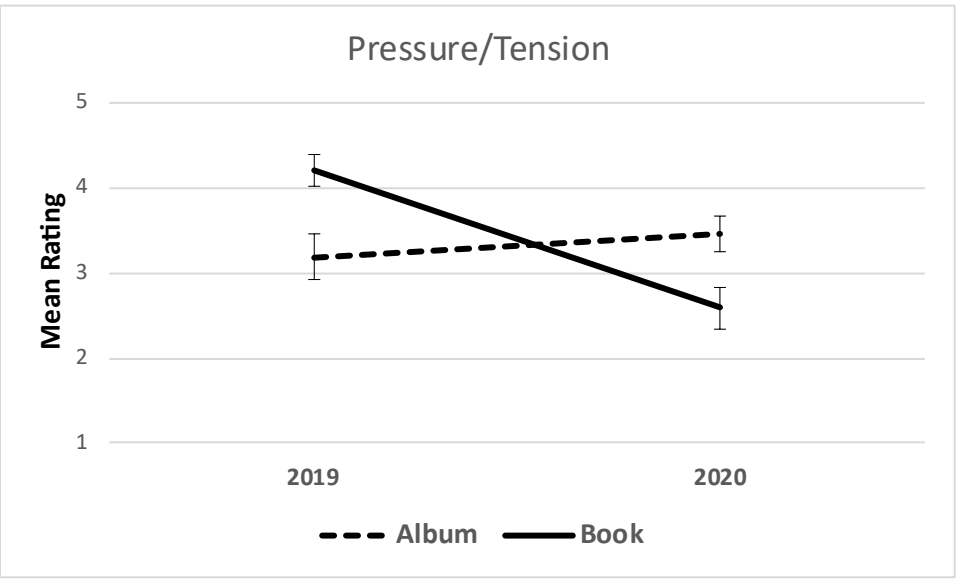

*Note:* Error bars represent SEM. Album 2019 *n* = 20, Album 2020 *n* = 23, Book 2019 *n* = 26, Book 2020 *n* = 17.

*Figure 2a. Interaction effect in student ratings of Interest/Enjoyment for two projects in the same Design course across two years*




*Note*: Ratings for the Book project increased in 2020, when the project changed to include a real stakeholder. Ratings for the Album project, which had a real stakeholder in both years, did not change significantly. Error bars represent SEM. Album 2019 *n* = 20, Album 2020 *n* = 23, Book 2019 *n* = 26, Book 2020 *n* = 17.

*Figure 2b. Change in mean student ratings of Pressure/Tension for two projects in the same Design course across two years*




*Note*: Ratings for the Book project decreased in 2020, when the project changed to include a real stakeholder. Ratings for the Album project, which had a real stakeholder in both years, did not change significantly. Error bars represent SEM. Album 2019 *n* = 20, Album 2020 *n* = 23, Book 2019 *n* = 26, Book 2020 *n* = 17.

*Qualitative analysis*

The qualitative findings support the quantitative analyses regarding the positive and negative responses to the more and less realistic components of the projects, respectively.

The qualitative data analysis integrates and adapts aspects of framework analysis (Goldsmith, 2021) for the initial coding phase and reflexive thematic analysis (Braun & Clarke, n.d.) for the pattern-seeking phase. It consisted of the following phases:

*Phase 1: Establishing a framework*

A framework for analysis was built using the IMI subscales. Seven main themes were established to identify students' levels of self-motivation: interest/enjoyment; perceived competence; effort/importance; pressure/tension; perceived choice; value/usefulness; and relatedness.

*Phase 2: Coding the answers*

The entire data set for the two projects (Album and Book) was coded for both years (2019 and 2020) following the framework. The IMI questions for each of the seven factors were used to guide the initial coding of the students' answers by identifying keywords and phrases present in the data. Additional keywords and phrases for each factor were also identified in the text (see example in Table 2).

*Phase 3: Organization of coded data*

Data relevant to each theme was collated and organized in a side-by-side chart for comparison.

*Phase 4: Analysis and report*

Patterns in the data were identified and analyzed. Selected examples of students' answers were extracted for the report.

*Table 2. Example of framework for thematic analysis*

| | Q1: What differences did you find while working on a project for a real client with a real design problem as opposed to working with a fictional client on a fictional problem?<br><br>Please elaborate on your experience with the Album project. | |
|---|---|---|
| Code | 2019 | 2020 |
| IMI Factor: interest/enjoyment<br><br>IMI Survey Questions:<br><br>4. While I was doing this project, I was thinking about how much I enjoyed it.<br><br>6. This project fun to do. | • I had a lot of fun with this one.<br>• I really enjoyed working on a project with a real client.<br>• I enjoyed getting to speak with the client.<br>• I found that it was both more exciting, | • I was extremely motivated.<br>• It makes me more passionate about the work.<br>• It's exciting having real-life projects.<br>• I think it's really engaging because we are doing something real.<br>• I would love to see more projects like this. It's also very inspiring to know that your work might be picked as the real one and that also contributes a ton towards our portfolios! |

| | | |
|---|---|---|
| 12. I thought this was a boring project.<br>18. I found this project very interesting.<br>26. I enjoyed doing this project very much.<br>Other keywords/phrases found: exciting; favourite project; passionate; engaging; inspiring; great experience; rewarding; motivated; engaged. | and also a more stressful as any mistakes could affect an actual client.<br>• It felt like I could become more attracted to the project.<br>• It was my favourite project | • It was definitely a great experience, even though it did indeed add a higher amount of pressure as new designer but its still all part of the process of getting ourselves out there and back our work.<br>• This project was quite interesting and fun.<br>• After seeing all the great presentations and rationales in class I believe that we all learned a lot from the experience. It felt like everyone was engaged and wanted to make [the artist] proud. |

**Described benefits**. Students, overall, felt more engaged, self-motivated, and worked harder when the project had realistic components. An external stakeholder involved in the project seemed to make students invest themselves more than when the teacher is the only person that evaluates the work.

Additional benefits of real projects were self-reported by students while working with Album 2019/2020, and Book 2020 as follows. While working with the real project and/or stakeholders, students:

- expressed feelings of fun, excitement, engagement, and overall motivation
- felt effective, skilled, and satisfied with their performance
- conveyed feelings of pride, higher focus, ambition, and a drive to perform at a higher level
- invested more time and energy, took the project more seriously, did more research, crafted more thoughtful solutions, and didn't settle
- felt there was more purpose and meaning beyond receiving a grade
- appreciated the higher expectations to produce industry-ready outcomes
- found the real-life project to be a relevant and important exercise
- enjoyed interacting with clients through interviews and presentations
- felt appreciated and valued as a contributing member of a real-life creative community outside of the classroom

Students did not face significant challenges when working with the real projects. They generally felt anxious about presenting in public in both projects and across both years, but they were considerably less anxious in Book 2020. One explanation for this could be that even though the latter had a real stakeholder (author of the book), the project did not have a real outcome that was tied to a stakeholder evaluation. Even though several students voiced some level of tension with the real projects overall, most students explained that this pressure was connected to the project being real, so there was more at stake. Nevertheless, all students felt that working with real clients was a good opportunity to practice for the real world.

Too much choice or creative freedom seemed to be a problem for students working with the real client in both years of Album, as many students equated openness with a lack of direction. Students complained that having only one interview with the client was not enough and the information given had been too vague or too open, which students did not know how to interpret. This was not an issue with Book 2020.

**Described challenges.** Students overall faced significant challenges while working with the simulated project (Book 2019) and experienced the highest levels of anxiety and discomfort, as self-reported by students in the examples below:

***Lack of motivation***

> "I feel like with a fictional client you don't get to have that motivation to impress a real client which can affect our work."

> "I know for me [the fictional client] made me less motivated for the Book of the Year poster series even though I enjoyed it!"

***Uncertainty***

> "I think it's difficult when you have a fictional client because you are not too sure exactly what the client is looking for or wanting to communicate. With the Book of the Year, we were left to our own devices and creativity and how we perceived the book."

> "I think working with fictional clients you don't get the sense of personality as you would with someone real. You are reading from a brief about what is expected but you don't get to actually talk with someone about what they like so in a way you are kind of left in the dark about what to do."

***Lack of client feedback***

> "The difference while working with a fictional client is that you have to deal with assumed/hypothetical wants and needs instead of real ones."

> "Getting feedback from a real client is also a lot more personable over a teacher, for example, because they have passion behind their company/idea, which gives you incentive to do a better job for them."

> "No feedback from an actual client and how their mind works when interpreting a design. The instructor's interpretation is unrealistic as they are trained to see certain things that a client may not see, and they can't project a real client's ideas."

**Book 2019 content**. It is important to note that the content of the Book 2019 was challenging for most students and contributed to a lack of confidence among them. Students found this book (about issues of decolonization written by an Indigenous writer) to be "difficult," "too conceptual," "unfamiliar," and "sensitive." For example:

> "I think it really was more stressful for myself and other students as well because we were designing for a culture we knew nothing about which really caused a lot of guessing and doubts to whether or not we were doing the book justice."

**Inconsistencies.** Unexpectedly, the Book 2019 project had many positive qualitative responses regarding creative freedom and choice. These statements are not consistent with average quantitative data for "perceived choice" ratings, where the Album ratings for both years and Book 2020 ratings tended to be higher. Some students appreciated being able to put their own personal style into the project with the opportunity to "think outside the box" and do what they wanted, as opposed to working with real clients who could potentially constrain the outcomes. One 2019 student reflected:

> "In hypothetical situations, we can kind of do whatever we want. In school, the Book [2019] project is up to our own interpretation. If we were working for a client, we would be designing around their interpretation of the book."

We are unsure how to reconcile this difference between quantitative ratings for "perceived choice" and individual comments about choice that seem quite positive about Book 2019. It is reasonable to hypothesize that there are individual differences in how such choices are perceived, but we don't currently have evidence to support that assertion.

## Discussion

From the quantitative and the qualitative analyses, we observe that students engaged more with the projects that were real or included a real stakeholder. This supports Hypothesis 1, which suggests students would express more intrinsic motivation for the Album projects, and Hypothesis 2, which suggests changes to the Book project would increase student motivation. Students said that they enjoyed "getting to speak with the client" and "designing for the client rather than the teacher" and found more purpose in the fact that "there was a real need for a problem to be solved." Even though there was a lot at stake with the competition aspect of the Album project, students experienced moderate pressure and even had "a lot of fun" with it.

Students experienced some challenges with the openness of the Album projects because the clients did not have a direction they wanted to pursue. Some students felt "blocked" at times, while others felt they "lacked direction." Regarding the content, some students felt it was hard to work with a musical genre (jazz) for which they had no prior knowledge.

In contrast, students working with the fictitious project (Book 2019) felt unprepared, were not happy with their performance, and found the overall book content challenging. It should be noted that this project rated low in the perceived choice subscale, and yet some students provided comments that suggested freedom of choice for that same project. Students expressed that not having a real client gave them free rein in this project and "more opportunity to think outside the box with a fictional client."

The results of the quantitative analyses revealed that changing the Book project to include a real-life stakeholder (the author of the book) resulted in a significant change to students' perception of that project. There were significant increases in most intrinsic motivation factors and a decrease in the pressure or tension that students felt in response to the project. In 2019, the Book project received more neutral or negative ratings, and the analysis of student comments was consistent with quantitative ratings. It was not a project that students enjoyed, and it elicited frustration and anxiety. After including the author in the project (2020) and changing the outcome from prescribed to open, it became more enjoyable and engaging to students and elicited comments that suggested students truly valued the experience. Notably, there were no differences across the four iterations of design projects with the perceived

importance of the projects: students felt that all assignments were important and required significant effort.

It is also worth noting that student perceptions of the Album assignment did not vary significantly from 2019 to 2020 (despite changes associated with pandemic teaching). Moving to a fully online format did not diminish student engagement, as measured by the IMI. While the purpose of this paper was to evaluate the efficacy of using real-world stakeholders and was not explicitly designed to evaluate impacts of pandemic teaching, it is reassuring to find that student engagement was upheld in this course and that well-designed assignments can be used successfully in multiple teaching contexts.

**Limitations**

There are several limitations to our design and analyses based on factors associated with the Book project. Given that the book chosen by the university changes each year, we are not able to evaluate whether the assignment used in 2020 would have improved student perceptions of the book used in 2019, which had more challenging content. Because the project changed in 2020, we cannot determine whether the book used in 2020 would have had the same mediocre ratings as the book in 2019. The two books had different formats (short story/poetry/essay vs. novel) in different genres with different themes. It is also the case that the author of the 2020 book was enthusiastic about working with students and meeting online for discussions and questions, while the 2019 author did not have an opportunity to meet with students. It is possible that different authors would have different effects as stakeholders.

The Album project also had different stakeholders and content from year to year (different musicians and works), but this did not appear to affect student perceptions of the assignment; however, we do not know if the Book and Album projects affected students in the same way.

It is worth noting that this study was initiated because the first author had noted differences in student reactions to the two projects across several terms of teaching, and in each case, the less realistic project (Book) was less preferred. The results of this study lend support to that initial observation. However, this study is about the two experiential learning projects, so we cannot compare these results to different types of student assessment; for example, we have no direct comparison between an experiential project and a standard term paper. The limitations of this study could be addressed with future research.

**Implications and Future Directions**

The scholarship of teaching and learning is often “imperfect” from the perspective of experimental design because there are too many variables that we cannot control in classroom settings. Still, the data provides preliminary evidence that the inclusion of a stakeholder and more realistic features can motivate students to produce high-quality work and may lead to intrinsic motivation for their academic work. Future research may identify more specific factors that affect student engagement and motivation, which may support these results.

This preliminary study showed that students experienced higher motivation when involved in a realistic project versus a simulated project. Despite the relatively small sample size ($n$=44 for Album and $n$=43 for Book), the analysis of effect sizes reveals that the differences in student attitudes between the projects are large enough to be detected. Even though the

causes of the differences could go beyond the realism of each project—the difficulty of the book, for instance—the data suggest that students were more intrinsically motivated while working on a realistic problem and with a real stakeholder. Phase 1 results informed the redesign of the Book project, which now offers greater openness and authenticity, and Phase 2 demonstrated that the change was beneficial for student engagement.

Additional research is needed to determine whether these results can be generalized to other types of assessment methods or other academic disciplines. We can implement these methods to compare classes taught in different disciplines but using similar types of assessments. We can also compare effects of different assessments in similar classes. On a practical level, these results provide evidence to support the first author's commitment to experiential learning projects in the design classroom. The findings will also inform future curriculum development with more emphasis on learning opportunities that empower, support, and respect design students' need for choice and autonomy. Placing student motivation at the forefront of curriculum development can lead to improved academic success as well as facilitate other aspects of growth and development for students. Using high-impact educational practices, like authentic projects with realistic outcomes and stakeholders, helps design students build multiple skills at once. When we provide students with these types of learning opportunities, we support their need for autonomy, competence, and relatedness as foundations for self-regulation. Our classrooms and curricula can then foster true engagement—all while enhancing students' overall performance and well-being.

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**Appendix: Survey Items Presented to Student Participants**

**Please answer these first three questions with as many details as you can provide.**

1. What differences do you notice between working on a project for a real client with a real design problem, as opposed to working with a fictional client on a fictional problem? Please talk about your experience with each type of project.

2. You presented your final work in front of the real client. Please talk about:
   a. Your experience of preparing for the presentation (include rationale writing)
   b. Your experience of presenting in front of the client

3. In this project, you translated music/a musical genre into a design. Please talk about:
   a. Your process for translating the original work into a design
   b. Any challenges you faced in translating the original work into a design

**For the following items, please indicate how true the statement is for you, using the scale below as a guide:**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Not at all true | | Somewhat true | | Very true |

1. While I was doing this project, I was thinking about how much I enjoyed it.
2. This was a project that I couldn't do very well.
3. This project was fun to do.
4. This project offered a lot of room for creativity and originality.
5. This project felt too constrained and didn't allow me to be creative.
6. It was important to me to do well in this project.
7. I was anxious while working on this project.
8. I tried very hard on this project.
9. I thought this was a boring project.
10. I think this was an important project to do in this class.
11. I think this project can help me get noticed outside of the classroom.
12. I think I did pretty well at this project compared to other students.
13. I felt really distant to my peers while doing this project.
14. I put a lot of effort into this project.
15. I found this project very interesting.
16. I felt very tense while doing this project.
17. I felt relaxed while doing this project.
18. I felt really supported by my teacher while doing this project.
19. I felt pretty skilled at designing album covers.
20. I felt like I belong to the design community while doing this project.
21. I felt I could do what I wanted in this project.
22. I felt close to my peers while doing this project.

23. I enjoyed doing this project very much.
24. I didn't put much energy into this project.
25. I did not find this project valuable or useful.
26. I did not feel nervous at all while doing this project.
27. I believe I had some choice while doing this project.
28. I believe doing this project could be of some value to me.
29. I am satisfied with my performance in this project.
30. After working at this project for a while, I felt pretty competent.