League of Learning: A Study of Classroom Intervention Effectiveness

Ashley Guajardo, PhD
University of Utah
Building 72
332 1400 E
Salt Lake City, UT 84112
ashley.guajardo@utah.edu

Nina Feng, PhD
University of Utah
Martha Bradley Evans Center for Teaching Excellence
295 S 1500 E
RM 1705 SLC, UT 84112
nina.feng@utah.edu

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EXTENDED ABSTRACT
During the 2022 Game Developer's Conference Weszt Hart, head of player dynamics at Riot Games, presented a new approach to counter toxic player behavior. Toxic player behavior in the popular Riot Games title *League of Legends* (2009) includes hate speech, cheating, leaving the game before completion, intentionally losing the game, and verbal abuse (Ku 2020). Admitting that moderation can only do so much to stop incivility in *League of Legends*, Hart described a novel, pro-social approach Riot Games is factoring into the design of their next generation games (Machkovech 2022). The approach involves encouraging team-like behavior using techniques familiar to educators, coaches, and developmental psychologists. Future Riot Games titles will proactively counter toxic behavior by encouraging teamwork in gameplay and by rewarding friendly and helpful players (Machkovech 2022).

Teaching faculty often face struggles similar to Hart's team at Riot Games. The classroom is not exempt from pervasive toxic gamer culture (Ruberg 2019) nor challenging behavior (Zagal and Bruckman 2008). Toxic gamer culture refers to the harassment of people who are non-cishet, white, or male in an effort to gatekeep videogame culture (Salter and Blodgett 2017; Paul 2018; Boudreau 2018). Although there is an assumption that by the time students reach university, they will understand how to comport themselves in a classroom environment, often that is not the case. This is particularly an issue in large, introductory, undergraduate classes where students may feel anonymous or otherwise emboldened to engage in disruptive behaviors. For the purposes of this abstract, disruptive behavior means anything from chatting during lectures, to non-participation in groupwork or activities, to shouting profanities at the instructor. Past research has found disruptive behavior to be common in large undergraduate classes which struggle with weak student engagement, decreased depth of learning, ineffective interactions, high failure rates and absenteeism (Boulatoff and

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Cyrus 2022; Cash et al 2017; Monks and Schmidt 2011). Disruptive student behavior is at best distracting and at worst harmful for the progression of a class and the performance of students. Like Riot Games' previous methods of moderation, university codes of conduct usually emphasize reactive and punitive measures to counter disruptive classroom behavior only after it has happened. However, classes which emphasize discovery, interactive activities and peer-to-peer learning and have been found to be successful at combating problems like failure rates and low student engagement (Förster et al 2018). Likewise, for engineering classes in particular, educational interventions which encourage feelings of belonging amongst students have been shown to increase graduation rates (Rhee and Oyamot 2017). Inspired by the strategies and techniques embraced by Riot Games' player dynamic team, this extended abstract offers DiGRA attendees documentation of evidence-based, pro-social strategies to use in the classroom as well as an assessment of the strategy's effectiveness. This is of particular interest for DiGRA's audience as student interest in university game-related degrees increases and demand drives growth in class size.

This extended abstract presents an educational intervention utilizing pro-social pedagogy in an introductory, undergraduate game design class with 97 students taught between August until December 2022 ('Fall semester'). The pro-social techniques used during this class include: an emphasis on accessibility of lecture material (i.e. live captioning for hearing impaired or non-native English speaking students); diversifying course material (i.e. ensuring students see people who look like them making and talking about games); use of technology such as Mentimeter to increase engagement with lecture content; small group work and workshops for peer-to-peer learning; and the formation of teams for homework completion for the duration of the semester. The techniques applied in this intervention have their foundations in emotional intelligence pedagogy (Linker 2014), early childhood education (Combs and Slaby 1977; Zhu et al 2016), and the new games movement (Fluegelman 1976; DeKoven 2013). The class was previously taught from January until May 2022 ('Spring semester') with 39 students and no explicit pro-social activities. The Spring 2022 class struggled with class motivation and absenteeism, which combined with an increase in class size, prompted the pro-social intervention for the following Fall semester. The pedagogical intervention occurred as a result of the class size increase and the desire to proactively counter large-class-problems such as the aforementioned disruptive student behavior, toxic gamer culture, high failure rates, and weak student engagement.

The intervention's effectiveness is assessed through a comparative analysis of course syllabi, student performance, and official university student course feedback between the two semesters. Ethics approval to use student data in this abstract was approved by the Institutional Review Board at the author's university. In the analysis of course syllabi, similarities and differences will be highlighted to demonstrate the insertion of pro-social strategies into the course design. Excerpts from the syllabi will be included in the presentation, but are omitted in this abstract for anonymity purposes. A sample breakdown of student performance and course feedback is provided below in Table 1. Table 1 shows that despite class size increases, the Fall 22 class performed better when compared to the Spring 22 class. The grade point average (GPA) of students is higher with fewer failing grades and fewer students dropping out or not completing the course.

Performance Metric	**Spring 22**	**Fall 22**
Class size	39	97
Class GPA	3.2	3.8

Number of 'fail' grades	3	0
Number of withdraws/incompletes	4	1
Student response to course effectiveness (% strongly agree)	56.3%	72.7%
Student response to instructor effectiveness (% strongly agree)	75%	78.2%

Table 1: An overview comparison between the Spring 22 class (no intervention) and Fall 22 class (pro-social intervention).

The initial assessment of pro-social intervention outcomes is promising. When the two courses are compared side-by-side, course and student performance metrics indicate that the use of pro-social techniques can reduce negative outcomes associated with large class sizes. In this case, student performance metrics increase with fewer failing grades and higher overall grade point averages in the class with the pro-social intervention. Likewise, student evaluation of the course and instructor effectiveness also increase for the class with the pro-social intervention. Past research indicates that we should expect a decrease in student grades and a decrease in student satisfaction when the size of a class increases (Boulatoff and Cyrus 2022; Cash et al. 2017; Monks and Schmidt 2011), but the pro-social intervention seems to have had an effect to the contrary. Of course, there are many variables which factor into student grade performance and class satisfaction. It is outside the scope of this extended abstract and presentation to account for compounding variables and longitudinal outcomes beyond the two semesters presented here. Even considering these limitations, DiGRA attendees will walk away from this presentation having learned about pro-social techniques they can apply to their classrooms and the potential outcomes of that application.

BIBLIOGRAPHY

Boudreau, K. 2018. "Beyond Fun: Transgressive Gameplay- Toxic and Problematic Player Behavior as Boundary Keeping." In Jorgensen, Karlsen, F., Stenros, J., Mortensen, T. E., Navarro-Remesal, V., Pötzsch, H., Sageng, J. R., Consalvo, M., Wirman, H., & Jones, R. 2018. *Transgression in Games and Play*. MIT Press. https://doi.org/10.7551/mitpress/11550.001.0001

Boulatoff, C. & Cyrus, T. L. 2022. "Improving Student Outcomes in Large Introductory Courses". *International Review of Economics Education*, 41, 100247. https://doi.org/10.1016/j.iree.2022.100247

Cash, L.J., Graether, S. P., & Jacobs, S. R. 2017. "An Analysis of the Perceptions and Resources of Large University Classes". *CBE Life Sciences Education*, 16(2), ar33. https://doi.org/10.1187/cbe.16-01-0004

Combs, M. and Slaby, D.A. 1977. "Social-skills Training With Children". *Advances in Child Psychology*, pp.161-201.

DeKoven, B. 2013. *The Well-Played Game: A Player's Philosophy*. Cambridge, MA: MIT Press.

Fluegelman, A. 1976. *The New Games Book*. Garden City, NY: Dolphin Books.

Förster, Weiser, C., & Maur, A. 2018. "How Feedback Provided by Voluntary Electronic Quizzes Affects Learning Outcomes of University Students in Large Classes". *Computers and Education*, 121, 100–114. https://doi.org/10.1016/j.compedu.2018.02.012

Ku, Y. 2020. "Toxic Behaviors in Team-Based Competitive Gaming: The Case of *League of Legends*". *CHI PLAY 2020*, 2-4 November 2020, Virtual Event, Canada.

Linker, M. 2014. *Intellectual Empathy: Critical Thinking for Social Justice.* Ann Arbor, MI: University of Michigan Press.

Machkovech, S. 2022. "How to Make Online Games Less Toxic? GDC Devs Debate Moderation". *Ars Technica*. https://arstechnica.com/gaming/2022/03/how-to-make-online-games-less-toxic-gdc-devs-debate-moderation/3/

Monks, J. & Schmidt, R. M. 2011. "The Impact of Class Size on Outcomes in Higher Education". *The B.E. Journal of Economic Analysis & Policy*, 11(1), 1. https://doi.org/10.2202/1935-1682.2803

Paul, C. 2018. *The Toxic Meritocracy of Video Games: Why Gaming Culture is the Worst*. Minneapolis: University of Minnesota Press.

Rhee, Johnson, C., & Oyamot, C. M. 2017. "Preliminary Findings Using Growth Mindset and Belonging Interventions in a Freshman Engineering Class". *Association for Engineering Education - Engineering Library Division Papers*.

Riot Games. 2009. *League of Legends.* Online game. Riot Games.

Ruberg, B. 2019. What to Do When "Toxic Gamer Culture" Enters the Classroom. Game Developer Conference 2019. San Francisco, CA. https://www.gdcvault.com/play/1025923/What-to-Do-When-Toxic

Salter, A. and Blodgett, B. 2017. *Toxic Geek Masculinity in Media: Sexism, Trolling, and Identity Policing*. London: Palgrave Macmillan.

Zagal, J. and Bruckman, A. 2008. "Novices, Gamers, and Scholars: Exploring the Challenges of Teaching About Games." Game Studies, 8(2). http://gamestudies.org/0802/articles/zagal_bruckman

Zhu, J., Kerns, C., Connell, J. and Lyon, N. 2016. "Using Interactive Social Story Games to Teach Social Skills to Children with Autism." Proceedings of the First International Joint Conference of DiGRA and FDG, 1 (13).