

NASEF Internal Report: Student Motivation in League Play
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NASEF

The North America Scholastic Esports Federation (NASEF) is a non-profit esports program for middle and high school students. What makes NASEF unique is its enriched esports model. NASEF uses student interest in esports as a context and means for learning, school affiliation, and social-emotional skills. The NASEF program accomplishes this through school-affiliated extracurricular clubs rather than just isolated competitive teams, engaging students not only in competitive play but also in esports-related intellectual and professional activities from shoutcasting to logo design, from expository writing to data analysis, from club leadership to team collaboration. The research detailed herein is part of the program's assessment and evaluation, funded by the Samueli Foundation to ensure that the program continues to make good on its stated mission and goals.

Study Goals & Research Question

As an interest-driven out-of-school program for youth, NASEF builds on students' existing motivations to compete in esports as a way to connect them to academic goals, career pathways, and cognitive, emotional, and social habits that are positive for youth. But what are specific motivations that bring students to league play and our program in the first place?

Toward answering this question, we conducted a survey and interview study of students' underlying motivations for their participation in esports generally and NASEF specifically. Our research questions are the following:

- What time commitment do students make toward videogame play generally, playing esports generally, and NASEF participation specifically?

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- Do students report affiliation with their NASEF club and team?
- What motivates their participation?
- Are there any relationships between specific motivations to participate and amount of time invested and reported affiliation?

Study Design and Methods

To answer these research questions, we conducted a mixed method study of NASEF students and staff (GMs and coaches) that included (a) a quantitative online survey among NASEF students designed to assess their participation in terms of time invested, affiliation with the program, and motivations for participation; and (b) qualitative interviews with staff to better understand any quantitative patterns found.

Participation & Affiliation Variables

To measure participation, we assessed students on five (5) key variables, three time-related and two affiliation related. All *time-related participation items* on the instrument asked for students to report the average time they spent per week on each activity; for example, “How many hours per week do you spend on playing video games?” All items assessing *affiliation* were self-report – for example, “How much do you affiliate yourself with the team you play or work for?” – and used Likert scale responses ranging from 1 “Not at all” to 5 “Very much.”

Motivation Variables

To measure the specific motivations that brought students to the NASEF program, the survey included 44 items designed to measure 14 key motivation variables, based on the prior work of Lee & Schoenstedt (2011) who investigated motivations for participation in traditional sports. Here, we adapted their items to fit our esports and youth scholastic league context. Table 1 below contains all 44 survey items by the motivation variables they are designed to measure. All responses were constructed on Likert scales that ranged from 1 “Strongly Disagree” to 5 “Strongly Agree.”

Table 1. Esports Motivation Variables and Items

Motivation Variable	Survey Items
Entertainment	<ul style="list-style-type: none"> ● I play in the league because it is enjoyable. ● I play in the league because it is a fun way to spend my time. ● I play in the league because of their entertainment value.

<p>Knowledge</p>	<ul style="list-style-type: none"> ● I apply my trained strategies in the league. ● I use my knowledge about players and teams while playing in the league. ● I apply my knowledge to select in-game characters while playing in the league. ● I use my esports knowledge in general while playing in the league.
<p>Control</p>	<ul style="list-style-type: none"> ● The ability to modify the game set up enhances experience of playing in the league. ● I enjoy the controlling aspect of esports games.
<p>Identification with game</p>	<ul style="list-style-type: none"> ● My favorite game is the game I play in the league. ● I like any esports league related to my favorite video game. ● To continue to enjoy the esports game I like, I also play in the league.
<p>Design/graphics</p>	<ul style="list-style-type: none"> ● I enjoy virtual aspects of esports games with vivid graphics. ● I play esports games because of realistic graphics. ● I often play esports games because of the way they are designed.
<p>Competition</p>	<ul style="list-style-type: none"> ● I like to play in the league to prove to others that I am the best. ● When I lose to someone in the league, I immediately want to play again in an attempt to beat him/her. ● It is important to me to be the fastest and most skilled person playing the game in the league.
<p>Permanence</p>	<ul style="list-style-type: none"> ● I tend to play esports games because they are readily available. ● I tend to play esports games because I can play them at my convenience. ● I often play esports games because I can play them as long as I want.
<p>To pass time</p>	<ul style="list-style-type: none"> ● I play in the league because there is nothing else to do to pass time. ● Playing in the league can be a good way of passing time. ● Passing time is my primary goal to play in the league.
<p>Fantasy</p>	<ul style="list-style-type: none"> ● Playing in the league allow me to pretend to be a sport star or team member. ● I like to do something that I could not normally do in real life through playing in the league.

	<ul style="list-style-type: none"> ● I enjoy the excitement of assuming an alter ego through playing in the league.
Social Interaction	<ul style="list-style-type: none"> ● I participate in the league because it provides opportunities to be connected with others. ● I will spend time playing esports games in the league with others. ● An important reason for playing in the league is spending time with others. ● I use the league as a reason to get together with others.
Diversion	<ul style="list-style-type: none"> ● Playing in the league gives me a break from my regular routine. ● Playing in the league provides a change of pace from what I regularly do. ● I play in the league instead of other things I should be doing.
Arousal	<ul style="list-style-type: none"> ● I find that playing in the league raises my level of adrenaline. ● I play in the league because they excite me. ● Playing in the league keep me on the edge of my seat. ● I play in the league because they stimulate my emotions.
Skill	<ul style="list-style-type: none"> ● Playing in the league helps me learn skills for esports games. ● I play in the league to build esports game skills. ● Playing in the league can be a good way of learning skills for esports games.
Peer pressure	<ul style="list-style-type: none"> ● Knowing many others playing in the league makes me play more. ● I feel I need to play in the league because others play games. ● My friends force me to play in the league.

In addition to the survey, a series of interviews was conducted with NASEF GMs and coaches to explore student behaviors and attitudes as a way to confirm and expand on any patterns found in the quantitative data. We conducted 8 interviews total, each lasting roughly 45 minutes to 1 hour, that included questions on observed student motivations, behaviors, and attitudes during club meetings and events.

Data Corpus

A total of 118 students participated in the survey and 8 staff participated in the interviews. 24 surveys were incomplete or invalid and therefore removed from the corpus, resulting in a total data sample of n=94. Interviews were transcribed and uploaded to Dedoose for thematic analysis.

Results

Participation

Table 2 provides descriptive information about the level of participation and affiliation among students in the NASEF club. The *average amount of time* students spend engaged in videogames and esports generally is remarkably variable, ranging from 3-84 hours per week and 1-83 hours per week respectively. Note that the distribution of both is skewed to the left (Figure 1 below) so the medians for each variable are also included. On average, they spend 23.44 hours per week gaming across all titles, 18.39 of those of which are on esports titles specifically.

Table 2. Student Participation in Average Time Spent and Affiliation

	n	minimum	maximum	mean	median	Standard deviation
Videogames (hours weekly)	94	3	84	23.44	18	16.9566
Esports (hours weekly)	94	1	83	18.39	13	15.266
NASEF Participation (hours weekly)	94	0	38	6.83	5	6.3103
NASEF Affiliation	94	1	5	3.56	-	1.053
Team Affiliation	94	1	5	4.09	-	1.033

By contrast, students spend an average of 6.83 *hours per week* on NASEF, far less than the number of hours spent gaming generally but nearly 2 hours more than the 5 hours per week students typically spend in all extracurricular activities combined (Fredricks, 2012). Here, we include all forms of participation in NASEF from team practices and training to support activities and enrichment events.

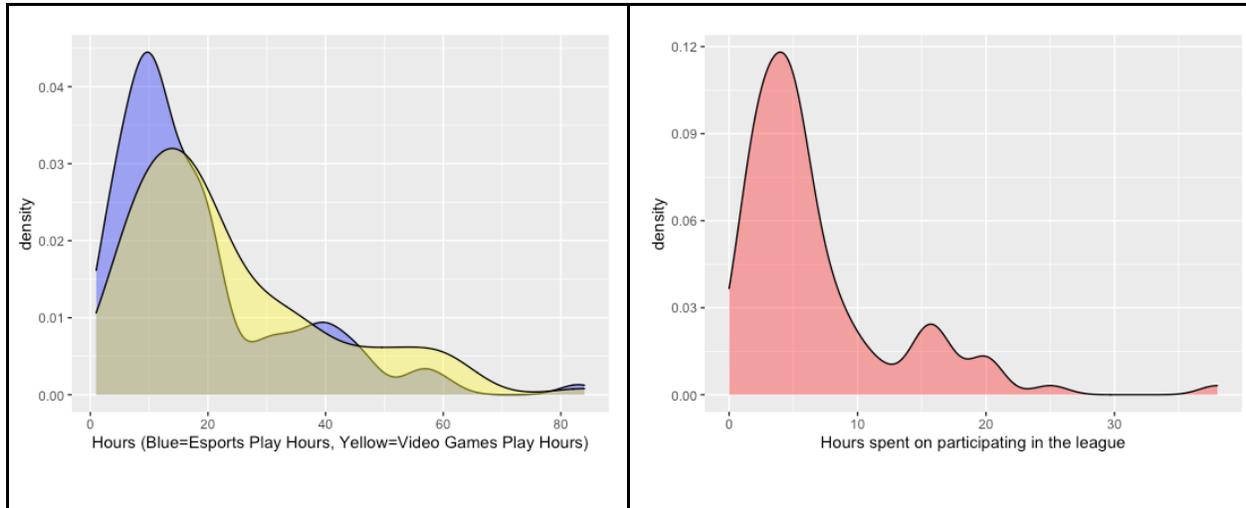


Figure 1. Distribution of participation in videogames and esports (left panel) and NASEF (right panel) in average hours per week.

Affiliation

Figure 2 below reports the frequency of students reporting each level of affiliation with the NASEF club (in red) and with the school-affiliated team (in green), ranging from “Not at all” affiliated to “Very much” affiliated. The majority of students report positive affiliation with both the NASEF club and the NASEF team associated with their school.

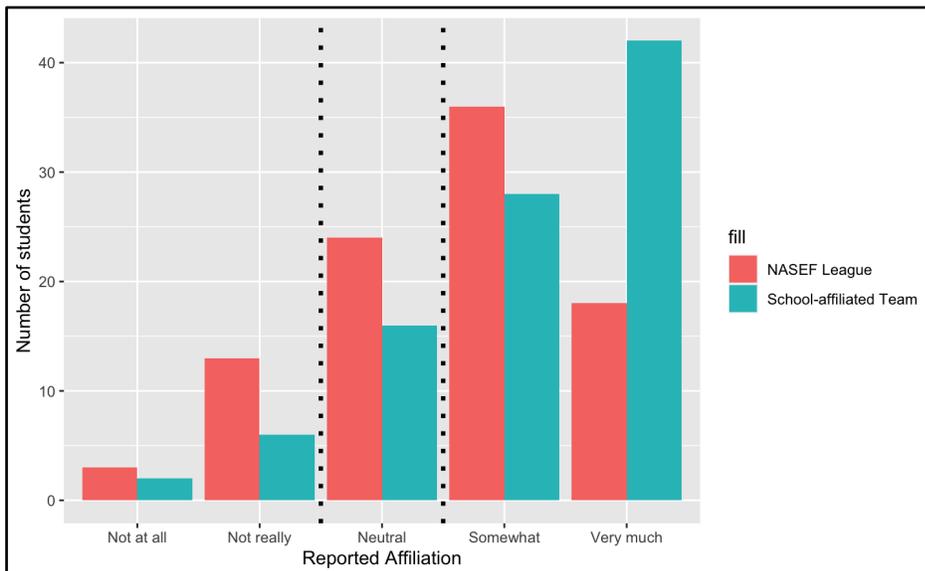


Figure 2. Student-reported affiliation with the NASEF club (in red) and team (in blue).

A paired samples t-test was conducted to compare NASEF club versus team affiliation. There was a significant difference in reported affiliation with club ($M = 3.56$, $SD = 1.033$) versus

team ($M= 4.09$, $SD= 1.053$); $t(93)= -5.468$, $p = 0.000$. Thus, although students report positive affiliation with both, they report significantly greater affiliation with their team than with the NASEF league overall. Intuitively this makes sense: the NASEF league is a large organization and governing body for their esports competitions and club activities, but it is the locally based school-associated team with which students feel the greatest affiliation.

Motivation

Table 3 below shows the average reported score for each of the 14 motivation factors in rank order, with the most prevalent motivation for NASEF participation at the top.

Table 3. Student Motivations to Participate in NASEF

	N	Minimum	Maximum	Mean	Standard Deviation
Knowledge	94	1.00	5.00	4.4255	.75743
Skill	94	1.33	5.00	4.4220	.80199
Entertainment	93	1.00	5.00	4.4194	.84828
Control	92	1.00	5.00	4.1413	.89971
Social Interaction	94	1.00	5.00	4.0496	.93640
Arousal	93	1.00	5.00	3.9516	.89021
Identification with Game	91	1.00	5.00	3.9451	.84804
Permanence	94	1.67	5.00	3.7872	.87423
Design/Graphics	93	1.00	5.00	3.7168	.80149
Diversions	94	1.33	5.00	3.6950	.89290
Competition	94	1.00	5.00	3.6418	1.00327
Fantasy	94	1.00	5.00	3.4255	.97201
To Pass Time	93	1.00	5.00	3.2330	.84668
Peer Pressure	94	1.67	5.00	2.9362	.74500

The strongest motivations to participate in NASEF were to gain and apply knowledge ($M=4.42$; $SD=0.76$) and skill ($M=4.42$; $SD=0.80$). The weakest motivations to participate were peer pressure ($M=2.93$; $SD=0.75$) and simply to pass time ($M=3.23$; $SD=0.85$). NASEF students clearly see the club as a vehicle for learning and skill development and do not simply participate in response to peer pressure or boredom. Interviews with NASEF staff show similar patterns. Coaches and GMs also emphasize the educational and productive aspects of NASEF, expecting their students to take their roles seriously and to engage accordingly. For example, one GM reported the following:

“We practice Monday, Friday, and if we don't have matches, then also Wednesday.... Beforehand we'll review what maps we'd want to play, what team compositions do we want to test out, and we'll discuss a lot of that beforehand, a lot of my students will come in during lunch and we'll talk about

those things. They also have a Discord server that they just constantly re-craft and we just throw ideas out at each other.” (GM,P3)

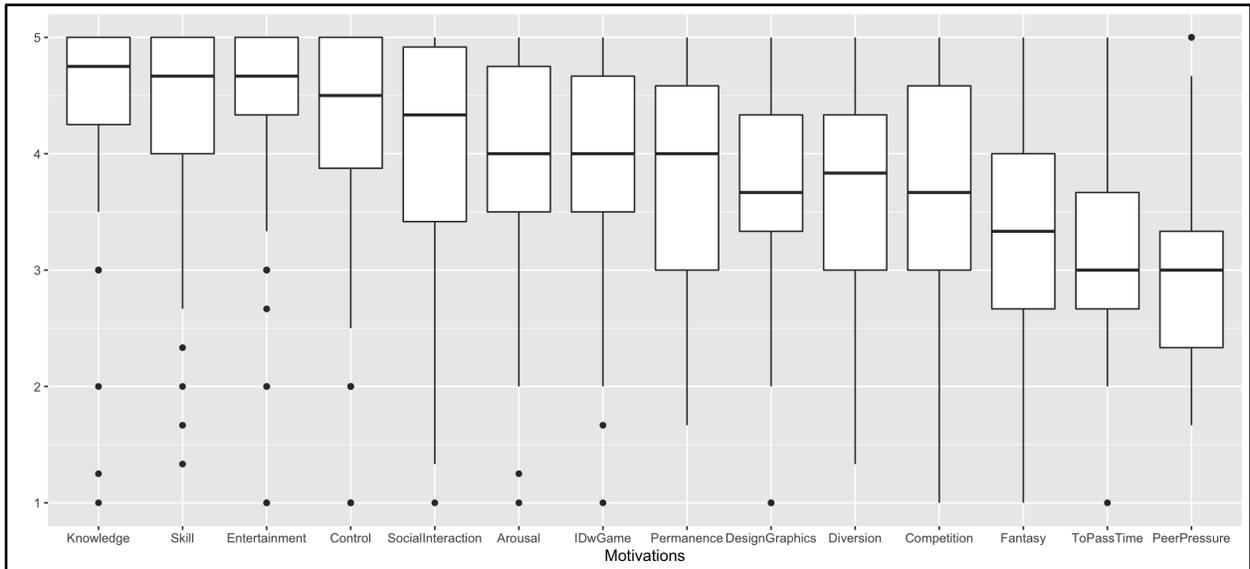


Figure 3. Box-and-whisker plots of 14 motivation variables.

Other notably strong motivators include entertainment ($M=4.41$; $SD=0.85$), control ($M=4.14$; $SD=0.90$), and social interaction ($M=4.04$; $SD=0.93$). Students may view NASEF as a vehicle for learning, but they are still highly motivated to participate in it as a site for enjoyment, autonomy, and for socializing with peers. In interviews, both GMs and coaches reported that NASEF dramatically and positively increased interaction between students and their peers, teachers, and other school administrators. Staff frequently reported how students who tended to be shy and less engaged in the classroom and other traditional school contexts became more outgoing, more social and more highly committed, highlighting the role of opportunities for teamwork and leadership in these transformations. This also at times becomes one of the greater challenges staff face. As one coach commented in the interview, “Most of our kids, I would say like 95% of our kids have never been a part of a team ever. So it's getting them to work as a team and know what that means. So I think that becomes one of the big challenges” (GM/Coach, P4).

Relationships between Motivation & Participation

Are there any relationships between specific motivations to participate and reported affiliation? Multiple linear regression analysis was chosen to develop a model for predicting student participation in terms of time and reported affiliation from the 14 motivation

variables measured. The dependent variable “NASEF affiliation” did not pass preliminary tests for the assumption of the model, so only “team affiliation” was used.

A multiple linear regression was then calculated to predict “team affiliation” based on all 14 motivation variables. A significant regression equation was found ($F(14, 72) = 3.021, p < 0.001$) with an R^2 of 0.37. Participant’s level of team affiliation increased 0.791 level for each increased level of Knowledge, and participant’s level of team affiliation increased 0.379 level for each increased level of Peer Pressure. Participant’s team affiliation decreased by 0.364 and 0.327 for each increased level of Competition and To Pass Time respectively. Table 4 gives the summary of the regression model and regression coefficients for all 14 motivation variables. Based on these findings, it appears that student responsibility to other team members, both in terms of knowledge contribution and regular participation, engender increased team affiliation and identification. More research is needed to see whether this pattern bears out. As one GM stated in the interview, “You're not just playing a game to have fun with friends, although that's part of it, but you're playing a game to get better at it and make sure that you continue to grow as a player as well” (GM, P2).

Table 4. Model Summary and Regression Coefficients for 14 Motivation Variables

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.608 ^a	.370	.248	.855	1.746

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Standard Error	Beta			
(Constant)	2.027	.735		2.759	.007	3.616
Entertainment	-.107	.202	-.094	-.529	.599	3.671
Knowledge	.791	.228	.621	3.467	.001**	2.079
Control	-.143	.147	-.131	-.973	.334	2.347
Design/Graphics	-.370	.173	-.306	-2.136	.036	2.624
Competition	-.364	.148	-.372	-2.459	.016*	1.582
To Pass Time	-.327	.137	-.280	-2.381	.020*	2.475
Social Interaction	-.099	.151	-.097	-.656	.514	2.332
Skill	.186	.174	.153	1.068	.289	1.572
Peer Pressure	.379	.158	.282	2.402	.019*	2.068
Identification with Game	.054	.154	.047	.353	.725	2.397
Permanence	.298	.160	.269	1.861	.067	1.836
Fantasy	.131	.126	.131	1.037	.303	1.858
Diversions	-.153	.140	-.139	-1.091	.279	2.566
Arousal	.171	.162	.157	1.050	.297	3.616

Implications

Understanding the specific motivations of students involved in the NASEF can help us better engage our participants and better serve their needs. Based on these findings, three implications are worth consideration.

First, in terms of time investments, NASEF takes up more of students' time than most extracurriculars combined – but not traditional sports (Blackwood & Friedman, 2015). It may be that the hybrid club/sport nature of the NASEF program is reflected in the average amount of time participants invest each week in participation in it.

Second, in terms of affiliation, students report greater affiliation with their local school-based NASEF team than with the NASEF club, a finding that intuitively makes sense given that their local team is the organizing frame around which all club participation is based. In response to these findings, we may want to consider amplifying the program's focus on regional rivalries and competitions, club activities that amplify the school's profile and presence, and perhaps develop even new forms of recognition that are strategically local such as news releases targeting local television and radio media, letterman's jackets for varsity esports athletes, championship rings, and other tokens of recognition that can be worn and displayed at school.

This, in terms of motivation, the “scholastic” focus of the program is evident in the motivations students have in participation. Minimally, we can at least say that the program draws the type of student that wants to learn and improve. Yet despite this educational focus, students still consider the entertainment and social aspects of the program motivating and important. Overall, this appears to be a healthy balance between cultivation and recreation.

Finally, results from our multiple linear regression, in combination with staff interviews, indicates that there may be a positive feedback loop between expectations of students in terms of accountability to the NASEF team, both by their peers and by staff members, increases overall team affiliation. It may be worthwhile to investigate whether these same dynamics hold across all support roles in the clubs or only those roles reserved for competitive players. One potential way to amplify these interdependencies is to rely more heavily on students as organizers, leaders, and mentors (coaches and GMs) themselves.

References

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