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## An exploration of virtual learning communities as a possible response to educational disenchantment: Learning in Nerdfighteria

*Una exploración de comunidades virtuales de aprendizaje como una posible respuesta al desencanto educacional: Aprendizaje en Nerdfighteria*

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### **Abstract**

This chapter dwells into the possible correlation between experiencing educational disenchantment in formal education and feeling a sense of belonging and active learning in virtual learning communities (VLCs), specifically the community Nerdfighteria. By closely examining the community and applying a Pearson's Correlation Coefficient Test from data acquired through a questionnaire, a moderate correlation was found among both components demonstrating a diversity among participants and community members. However, the information provided by participants and observation of community virtual interactions allowed the possibility to understand virtual learning communities as a response to educational disenchantment, in the way that they point out to larger societal problems and spaces that solve personal dissatisfaction, in this case with the broad educational standardized system. This was done as an effort to comprehend learning as a social endeavor and virtual interaction as a rich space for analysis of human interaction, both virtually and physically.

*Keywords:* virtual learning communities, educational disenchantment, sense of belonging, Nerdfighteria.

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### **Cita sugerida:**

Rojas Mena, P.S. (2022). An exploration of virtual learning communities as a possible response to educational disenchantment: Learning in Nerdfighteria. En Leganés-Lavall, E.N. (Coord.), *Retos educativos para un desarrollo humano integral*. (pp. 94-105). Madrid, España: Adaya Press. <https://doi.org/10.58909/ad22447986>

## Resumen

Este capítulo profundiza en la posible correlación entre experimentar desencanto educativo en la educación formal y sentir un sentido de pertenencia y aprendizaje activo en las comunidades virtuales de aprendizaje (VLC), específicamente la comunidad Nerdfigtheria. Al examinar la comunidad y aplicar la prueba del coeficiente de correlación de Pearson, a partir de los datos adquiridos a través de un cuestionario, se encontró una correlación moderada entre ambos componentes, lo que demuestra una diversidad entre los participantes y los miembros de la comunidad. Sin embargo, la información brindada por los participantes y la observación de las interacciones virtuales comunitarias permitió la posibilidad de entender las comunidades virtuales de aprendizaje como una respuesta al desencanto educativo, en la manera en que señalan problemas sociales mayores y espacios que resuelven la insatisfacción personal, en este caso con el amplio sistema educativo estandarizado. Esto se hizo como un esfuerzo por comprender el aprendizaje como un esfuerzo social y la interacción virtual como un espacio rico para el análisis de la interacción humana, tanto virtual como físicamente.

*Palabras clave:* comunidades virtuales de aprendizaje, desencanto educacional, sentido de pertenencia, Nerdfigtheria.

## Introduction: Why does it matter?

Education as a social institution has become pivotal to the inner workings of human societies. This, in turn, increases the personal significance school has for each individual; not only in terms of influential power, but regarding the interpretation they bestow upon their educational experiences. Educational disenchantment is the embodiment of one of the possible interpretations or reactions and it has the ability to shape social experiences surrounding education, as well as its outcomes. The concept comes from the failure of different schooling systems to meet expectations, such as the assurance of social mobility/security, a sense of belonging within a community and, in some cases, even learning (Wu, 2012).

Titular inflation contrasted to the socioeconomic efforts it may take to put a child through the entire primary and secondary education, even more so through collegial education, has created a general disillusionment in many countries (Aronowitz, 2001; Wu, 2012; Rifkin, 1995). This sentiment expands with issues like school bullying (Okumu *et al.*, 2020; Huang, 2020), a lack of security in some schools (Melvin *et. al.*, 2019; Espelage *et al.*, 2018) and limitations surrounding school curriculums (Mena, 2019; Gamboa, 2020). However, to approach parts of this broad topic of educational disenchantment, it is necessary to understand the takes of students themselves, accompanied by their responses to the problems their education faces.

Consequently, this chapter aims to explore virtual learning communities as a possible student response to educational disenchantment. Because of the rise of the use of the internet as an educational tool and the prominent role of social media usage in current educational environments, virtual learning communities fall into the ecology of educational transformation and student responses.

Therefore, the main objective becomes to analyze the extent to which virtual learning communities correlate to educational disenchantment with the formal schooling system. To achieve this, the community Nerdfigtheria was selected as a case study, due to the nature of the community and the relevance learning is given to core interaction amongst members. This is done as an effort to further understand the human dynamics taking a part in learning processes in current times and to respond to educational disenchantment, as part of the disillusionment crisis affecting societies; perhaps worsened by the pandemic and climate of political and environmental despair.

## **Theoretical framework and first explorations**

### *The basics of virtual learning communities and the background of Nerdfigtheria*

Human beings can form communities surrounding mutual interests, beliefs and/or ideas (Nikiforos, Tzanavaris, Kermandis, 2020). Virtual learning communities (VLCs) are defined by the shared goal of learning and knowledge building (Augar, Raitman and Zhou, 2004). The interaction takes place in an online environment in which collaboration becomes key to share creations and knowledge. This creates a shared meaning about a topic or learning process that further binds community members together through symbolic interaction and particular understandings that lead to a sense of belonging.

A sense of belonging is a crucial element of successful virtual communities and it is no exception to VLCs. Belonging is created through a mutual feeling of membership, legitimizing a sense of community. Said membership is experienced mostly through dialogues, which is why VCs develop a common communication code and shared linguistic idioms (Nikiforos *et al.*, 2020). Inner speech provides the learning experience a sense of enjoyment and reward, due to the feeling of complicity when it comes to understanding a specific set of meaning available within the community.

This leads to introducing the community Nerdfigtheria as a successful VLC. Nerdfighters denotes the fan base and community members of the YouTube channel Vlogbrothers, its name demonstrating an embrace of nerd as a social label and identity. The channel started out in 2007 as a project of John and Hank Green to communicate through vlogs, instead of textual means (Mustonen, 2015).

The vlogs escalated to include political discourse, natural science and humanities analysis, as well as light-hearted cultural content. This channel currently has 3.42 million subscribers and branched out to include the Crash Course channel for academic content on various topics, Ours Poetica for poetry, SciShow for natural scientific content, among

other projects. The community is also known for humanitarian projects, especially their efforts to raise money towards building a better healthcare system in the country Sierra Leone and the cancer awareness charity, *This Star Won't go Out* (Steenkamp, 2018).

Nonetheless, the focus of this chapter are Nerdfighters themselves and what makes this community relevant is the cognitive and intellectual core values it holds. Learning is a recurrent motif in their cultural productions and the cultural artifacts of fans surrounding the knowledge they build and share as a community. This first impression led to forming a hypothesis on the educational experiences of Nerdfighters. Given that oftentimes virtual communities may function as a response to social dissatisfaction with mainstream social norms (Proulx, 2011), it is plausible to hypothesize that Nerdfighteria itself is a response to the educational disenchantment many students can face within the educational system of their sociocultural setting. Therefore, to explore this idea it is necessary to understand YouTube as virtual learning tool and its implications on knowledge building.

### *YouTube as a virtual learning tool and a space for collaborative knowledge construction*

YouTube is a popular platform designed to share videos. The growth of its general audience member and content creators meant the apparition of different niches in diverse video topics and overall visual and auditive content. The educational niche is ever-growing in several areas, but this chapter focuses on traditional academic education.

In other studies, YouTube has been associated with playing a significant role in self-directed learning by providing a customizable learning environment (Lee *et al.*, 2017; Berk, 2009; Bonk, 2009). The autonomy the learner enjoys and the availability of the videos allows for it to be an effective learning platform (Lee *et al.*, 2017, Benson, 2015). But, circling back to community interaction, YouTube can be a space for collaborative knowledge construction.

Analyzing YouTube comments, Dubovi (2020) explains that knowledge co-construction involves going beyond knowledge sharing in which individuals examine each other's ideas, leading to idea improvement, synonymous with:

Collective knowledge building (Scardamalia, 2002; Scardamalia & Bereiter, 2014). Different individual voices are distinct, but through argumentative deliberation, individuals are able to identify dissonances and adopt differential positions, thereby achieving shared group cognition (Jeong, Cress, Moskaliuk & Kimmerle, 2017; Stahl, 2006). (p.9)

This shared group cognition is valuable to the learning process and specifically relevant in the context of responses to educational disenchantment, because it enhances a sense of community interaction and the learning experience. Therefore, it is also important to consider if and how Nerdfighters, a YouTube-based VLC, learn through YouTube, to answer what correlation it has to their educational experiences in the formal educational system. The latter being a continuation of studies remarking YouTube learning as a complement to formal education and even a response to its inefficiency to keep up with modern knowledge demands (Lee *et al.*, 2017; Dubovi, 2020; Martaus, 2019; Tan, 2013)

## Methods

### *Data collection and sample*

The main hypothesis to explore is the correlation between educational disenchantment and the VLC Nerdfigtheria to conclude whether it is possible to interpret its flourishing as a result. Hence, it is necessary to evaluate if Nerdfighters experience educational disenchantment and if it has a correlation with a strong sense of community within Nerdfigtheria and effective learning within it; hypothesizing a positive one. This comes from an understanding of their base similarities (Proulx, 2011).

Bearing this in mind, primary data was collected from community members through a questionnaire asking about their educational and learning background; general use of YouTube as a learning tool; educational disenchantment measured by a Likert scale of their agreement with different statements related to their experiences in the formal educational system; and their appreciation or lack thereof of the community Nerdfigtheria as their own and as an important learning facilitator and/or motivator. The questionnaire also featured two open spaces for participants to anonymously share their thoughts and any information regarding their formal educational experiences and their educational experiences within the community. This is due to the fact that educational disenchantment has been approached as a broad issue, mostly through ethnographic lenses (Wu, 2012); therefore, acknowledging a need for observation and qualitative approach to complete quantitative analysis.

The questionnaire was elaborated using Google Forms and shared in Facebook groups, YouTube comment sections, subreddits and a discord server; all integrated/created by Nerdfighters. The decision to base the data collection on a convenient selection strategy and snowball selection comes from the attempt to view the community as multi-modal in its interactions (Waugh, 2017), even if the focus of the study is the knowledge construction taking place in YouTube. The original goal is to reach 250 answers, in order to maintain a sampling error of 6.2% or less. Even so, it is relevant to recognize that the population that decides to answer the questionnaire may share similar interests on the topic, motivating them to partake, amongst other possible unmeasurable biases that can disrupt the reliability of the results. That is why this primary data collection was accompanied by general observation of interactions within the YouTube comment sections of the Vlogbrothers channel and their content, intending to ensure the data collected is representative and sensical to community members.

### *Data analysis*

To process the date, there was a mixed qualitative and quantitative approach. The main hypothesis was approached by the application of a Pearson's Correlation Coefficient test, in an effort to find the strength of correlation between educational disenchantment and participation in a perceived effective VLC. The numbers came from the systematization of the results from the Likert Scale from each section that adds up to a number. The

maximum numeric punctuation each individual participant could have for educational disenchantment is 100 and 50 for a positive view on the VLC, according to the number of questions on each section.

Those results will be discussed through an analysis of the social learning components playing a role in VLCS, accompanied by the specific learning dynamics of Nerdfighteria (Steenkamp, 2018) and the examples found both in the comments observed, the statistical test applied and the open answers received in the questionnaire. Further dwelling on the community will be given by acknowledging the contents of Vlogbrothers videos through transcriptions, coming from an understanding of John and Hank Green as community members themselves, instead of leaders (Mustonen, 2015).

## Results

A total of 254 answers were obtained after sharing the questionnaire. The sample is compiled of 62.6% of Americans, meaning most of the answers relate to the American schooling system. That number is followed by 5.1% Germans and various other countries of residence, such as Netherlands, India, Australia, Costa Rica, Ecuador, Poland, Sierra Leone, Canada and Denmark, among others, providing a diverse representation of Nerdfighters and cultural backgrounds in smaller percentages.

Regarding their age, most were 18 to 25 years of age, as well as 26 to 35 and the smallest age group members are those below 18 years. Most of the participants have an undergraduate college degree, is in the process of completing it or already obtained a graduate degree. This indicates that only 2.4% is currently undergoing formal secondary schooling, whereas the rest that undertook the questionnaire had to recall their experiences from memory to answer the questions regarding a potential educational disenchantment.

Advancing to the topic in question, 87.7% of participants actively enjoy learning through YouTube, mostly using it to learn for the sake of learning and discover new ideas or topics, but also to complement studies or with formal academic purposes.

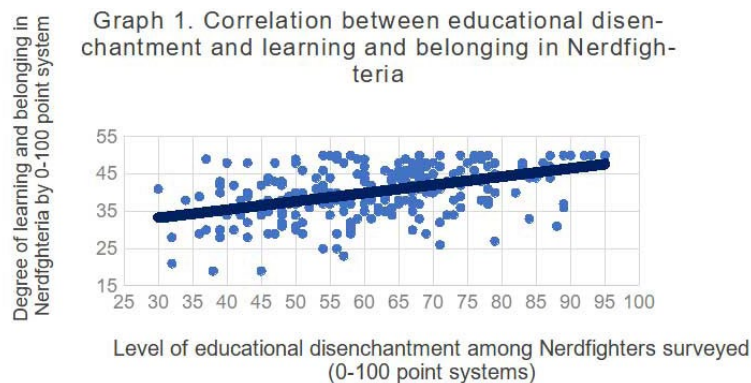
To measure educational disenchantment, a point system was developed by coding the answers to the second section of the questionnaire, according to the level of agreement the participant had with each statement about their experiences and opinions during their time in the formal schooling system. The maximum level of disenchantment they could reach was 100 points; the maximum obtained was 95, with a minimum of 30, showcasing diverging extremes among the answers. The average is of 62, pointing towards the existence of a significant level of disenchantment among participants, yet varying in degree, partly due to the different areas of possible disenchantment within the educational system covered in the questionnaire. The numbers are also affected by the background, which 221 participants elaborated on in the open sections of the questionnaire, giving valuable information to be discussed in the next section and possible further investigations.

The third section measured their sense of belonging and the perceived degree of learning they experience within the VLC Nerdfighteria, where the maximum possible points to obtain were 50, which was procured by 9 participants. The lowest points gathered were 19 by a person that declared themselves new and inactive in the community in

the open sections. But more related to the subject matter, the average received was that of 40 points, indicating a strong sense of belonging and high learning degree experienced within the community.

The specific answers received in the open sections maintain the same spirit found in online discourse among Nerdfighters, retaining a sense of awareness of their background, a tendency to further explain and discuss their answers, in addition to brief analysis of the specific educational disenchantment they experience, and/or the reasons they gravitate towards the community and how those interactions are learning experiences themselves or influence their formal learning endeavors. This provides valuable information to understand each individual result.

Before, however, to link both sections and make sense of the answers, a Pearson's Correlate Coefficient test was applied taking the final points of both main sections for each individual answer, gaining a result of 0.045. This number designates the existence of a correlation among the two main sections, but it is not generally considered a strong one, as can be seen in the graph below, where there is a positive trend upward and some correlation, yet some answers deviate significantly from the trend.



Source: Own creation

The overall result and the specific exceptions, both entail discussions to be had as follows.

## Discussion

The results obtained conclude that there is a correlation between being a member who actively learns and belongs in the VLC Nerdfigtheria and experiencing disenchantment with the formal educational system, specifically primary and secondary schooling. Nonetheless, the results do not point towards a strong correlation, leaving space for different areas of discussion far beyond the reasons why there is a correlation to begin with, specially given the gray area moderate and weak correlations can represent.

First, it is necessary to look at the broad community before examining specific answers. The main YouTube channel that gathers Nerdfighters, Vlogbrothers, has discussed throughout the years various topics surrounding schooling systems. The creators of the content focus on two main areas, joined by the philosophical nature of their discussions: STEM lead by Hank and the humanities and Social Sciences, which correspond to John. Though both excel at their specific roles, they share similar disappointments with the way subjects are thought in school, which they argue demotes motivation and actual learning, additionally limiting agency to the students in basic thinking processes and the possibility to explore their own ideas (Martaus, 2019; Vlogbrothers, 2010). This correlates with the experienced carried out by Nerdfighters themselves, denoting a recurrent discussion in Nerdfighteria discourse, which is one of the reasons why educational disenchantment can be common among its members.

Nevertheless, Nerdfighteria is a celebration of knowledge and learning, which entails that the sociocultural artifacts of its members revolve around solutions to possible deficiencies of educational systems. Out of those surveyed, only 24.8% feels or felt satisfied with their educational curriculum, whereas the rest feels disappointment and 60% needs or needed to find resources out of school to complete their studies. Said completion can regard a holistic approach to education, such as spaces for artistic freedom, but the open sections mostly explained the need for a space that allowed deeper understanding of a subject matter and the need to think freely. This is where a VLC gains relevance, specially in the context of standard testing where the goal is to teach and study for an exam result (Poulsen and Hewson, 2014), oftentimes removing learning for the sake of time limit and the difficulties found by the large gap in student to teacher ratio.

The educational channels created by Hank and John Green, members more than leaders of the community (given their symbolic linguistic approaches to the community studied by Mustonen in 2015), produce the platforms that allow a deeper exploration of restricted educational topics. But the channels do not control the flow of conversation nor the cultural artifacts (Nikiforos *et al.*, 2020) produced by and with Nerdfighters. When asked about Nerdfighteria as a VLC, most related their appreciation for discussion, dialogue and the outspoken learning nature of the community. This common theme signifies a consciousness of the VLC about dialogue as a foundation of any virtual community and the intention of reclaiming the loss of that component in formal education within massive and mandatory schooling systems, as is the case of most educational contexts of the participants.

This is relevant for looking into the specific results found because it warrants a concrete type of educational disenchantment among Nerdfighters; the diminishing of social humanitarian components in education. "Social learning theory suggests that learning is at the core of human existence and asserts that it is fundamentally a social phenomenon. Learning is thus a social process where interactions with others are central to all learning" (Steenkamp, 2018, page 28). And, while there is no denying the presence of interaction in learning traditional spaces, it has become an interaction that arises from a place of duty and habituation, more than collaboration and as necessary for all parts to experience learning.



Virtual learning communities focus on collaborative learning (McLellan, 1998; Augar, Raitman & Zhou, 2004; Nikiforos, 2020; Martaus, 2019; Steenkamp, 2018), whereas education based on standardized examination focus on individual qualification (Poulsen and Hewson, 2014). YouTube as a leaning tool allows learning to become an active experience, stimulating deeper learning due to its inclusion of social integration (Zhou et al., 2020; Lee *et al.*, 2017); simultaneously promoting lifelong learning (Greenhow and Lewin, 2016). This dynamic translates into other platforms created by Nerdfighters themselves such as Tuataria, a large discord server with multiple chat rooms, each devoted to a different topic in an effort towards collaborative and voluntary learning. That proactive approach to learning could also be argued as a reason for lower educational disenchantment, as those with lower degrees of educational disenchantment explained it through their love for learning and the privilege they find in exceedingly academically.

Nerdfigtheria platforms become symbols of a strengthened sense of community that arises from collaborative learning practices, given they become a kind of property owned by the VLC. Through those recurrent knowledge exchanges, people develop a sense of belonging (Steenkamp, 2018), which was found to be strong among Nerdfighters. Aside from relating their feelings of belonging within a very diverse community, Nerdfighters used the open sections to explain how belonging within a community helps them find motivation to learn or rekindle a love for knowledge. They related the community interaction as a source of inspiration and understanding towards different kinds of people, allowing for more inclusive spaces. This explains the tendency to convey a frustration with the social determinants for quality of education and overall learning in the open section asking for their educational experiences, ranging from the influence of socioeconomic status; gender identity; sexuality, racial identity; emotional and physical health. Those discussions showcase a deep sense of empathy among members, regardless of their personal experiences or level of educational disenchantment, as both high and low levels provided insight on educational determinants.

To those Nerdfighters, their community is not defined by a clear sense of “us” and a “them”, which is why it is often recalled that anyone wishing to be a member already is (Proulx, 2011). Belonging is oftentimes accompanied by othering, making communities grey areas when it comes to moral views of human interaction. Yet VLCs, in this case Nerdfigtheria, allow a broader sense of community membership, perhaps in part explained by the constant discussions surrounding humanity as a whole. Still, the dynamics within VLCs offer a broad understanding into what they mirror or avoid from in-person interactions.

## Conclusions

This chapter demonstrated the correlation of educational disenchantment and a sense of belonging and learning within the VLC, Nerdfigtheria. Specifically, the prevalent form of educational disenchantment found in the study focuses on a diminished focus on the social and humanitarian aspects of formal education, which leak into the quality of the

educational system as a whole and a resulting debilitated sense of learning in students. This is important in a context of continuous despair among societies and even more so, if interaction in upcoming virtual spaces is studied as a mirror into humanity or as a response to challenges faced in physical spaces. For the case of Nerdfighteria, it can be understood as collective responses to forms of educational disenchantments varying in degree and context, which allow to look into what makes effective learning social experiences, in the hopes of facilitating improvements in educational systems that go beyond a desire to meet institutional and ideological expectations.

Nonetheless, not only does this study need to be complemented by factual propositions of pedagogical transformation, it requires a more extensive analysis on what VLCs say about social interactions and what the issues raised by Nerdfighters and other communities diagnose on their sociocultural contexts.

While acknowledging methodological limitations, this chapter can provide insight relevant to current understandings of educational and educational progress, bringing an agency into individuals that is traditionally enjoyed by institutions as external hierarchies and not individuals as vital parts of those institutions, that is, as a functioning and mutually beneficial ecosystem. Specially, if it is possible to consider a climate of better human inclusion and collaboration in social spaces.

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