

Learning Through Network Interaction: The Potential of Ego-Networks

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Abstract: Networking platforms on the Internet constitute a significant place in the lives of young people. These platforms are not often considered as potential learning environments; yet they facilitate the circulation of a great amount of information and digital artifacts. People share, discuss, encounter ideas, find each other and form communities via these sites. This chapter focuses on how through these platforms informal learning networks become available. The principles of Networked Learning and ego-network analysis, a sub-strand of social network analysis, guide our research. Based on the survey-data of 1227 high-school pupils the network composition and networked interactions of youth are mapped. We present detailed results regarding with whom online interaction happen and if network interactions in young people's personal networks (i.e., ego-network) result in discovering new information, artifacts, web-sites, etc. The findings show that similarity between our respondents and their network contacts prevailed; online networks were often a replica of the offline social circles. Although one might expect that these homogenous networks would not provide these youth with new discoveries, the participants reported that they encountered novel content frequently.

Keywords:

informal learning, social network sites, ego-centered network analysis, networked learning

Our communication and interactions with others are increasingly more mediated and facilitated by web-based platforms and mobile tools. Social networking sites are good examples of such mediated communication. These sites are web-based platforms that allow users to send private and/or public messages, post comments, build web content and/or take part in live chats. While some networking sites highlight making social connections as a central characteristic (e.g.,

Facebook, Twitter, LinkedIn, Google+), others prioritize content sharing based on user participation and user-generated content (e.g., Instagram, Reddit, YouTube). What these platforms have in common is that they facilitate flows of, for instance, news, updates, comments, invitations and messages. There are millions of users of these sites, many of whom have adopted the habits of posting information, public and private messages, checking various networking sites for updates as part of their daily routine. Mobile access to social networks consolidated the place of these sites in our lives even more and the related social practices (e.g. using applications like WhatsApp, foursquare or twitter) became increasingly more embedded in everyday life.

Networking platforms are not specifically designed for education or learning purposes. Yet, these sites are potentially valuable for learning. These are information rich environments with many opportunities to discover, explore, enhance knowledge and share experiences (Ito, et al. 2010). The quality and novelty of the shared information may be debatable. In some forums and collective knowledge platforms (such as Wiki's) false and poor quality content can (and mostly do) get corrected and be improved by input of others. On other platforms the content is open for debate, discussion and commentary (e.g., Reddit). These platforms provide seemingly endless opportunities for exploring and navigation (Cousin, 2005). Levy (2000) summarizes the process of accessing knowledge in networks as "everyone knows something, nobody knows everything, and what any one person knows can be tapped" (in Jenkins, 2009, p.72). In this manner individuals are presented with multiple perspectives, from multiple resources including people with varied levels of expertise. These experiences are relevant for learning, because it enables individuals to examine various viewpoints, to enrich knowledge and form opinions.

In this chapter, following this line of reasoning, we claim that social networks mediated by networked technologies provide ongoing opportunities to engage in activities and conversations that could potentially lead to learning. The kinds of social relationships and interactions that

occur online heavily define the learning potential in networks, an issue that will be the center of this contribution.

Social networking platforms remain largely unexplored regarding the learning possibilities they create. There are several important bodies of work that can guide our expectations regarding learning in informal, social networks. First, socio-cultural approaches to learning provide the groundwork for understanding learning as a situated, social, distributed phenomenon that is inseparable from the social context in which it occurs (Wertsch, 1998; Rogoff & Lave, 1999). Second, networked learning studies, built upon the principles of socio-cultural approaches, provide the necessary ‘update’ for understanding and conceptualizing learning in a world where people are challenged with new and emerging technologies and new social practices and where technology infused forms of communication and collaboration is the standard (Hodgson, McConnell & Dirckinck-Holmfeld, 2012).

In the following sections, we address the socio-cultural and networked learning frameworks. We will then present a network analytic approach in relation to learning, explaining in particular the advantages ego-network (henceforth egonet) analysis and discuss the contribution of this method to networked learning research. We will finish with presenting our study conducted within networked learning framework, using ego-network methods.

Socio-cultural and Network Perspectives of Learning

Socio-cultural approaches have argued for the distributed and interactional characteristics of learning prior to the rise of network technologies. Human development is seen as both constituting and constituted by social, cultural and historical activities and practices; as such cognition and culture function together in a mutually defining process (Rogoff, 2003). In this approach, learning is a process that results from interacting and participating in cultural practices (Lave & Wenger, 1991). A key aspect of learning is mediation. Mediation refers to

the way that human mind and culture interact, namely, through available psychological, cultural and material tools (i.e., language, signs, symbols and items of the physical surrounding) (Cole & Wertsch, 2004). In order to understand these interactive learning processes, ‘mediated activities’ are seen as natural units of observation in socio-cultural approaches (Wertsch, 1998).

Current digital practices seen from socio-cultural perspectives mediate our self-representation, communication, understanding of the world, and our learning (Wertsch 2002; Gee 2004). Our encounters with networked technologies in hardware and software forms (e.g., respectively phones, laptops, online sites, apps) as well as our participation in the networked communities enable new ways of accessing and processing information (Erstad, 2012). The social character of our learning became more visible with the rise of network technologies, for it is now possible to trace resources distributed over a network and see a person’s connections within a larger social network (Gee, 2008). These developments ask for a rethinking of how we should understand ‘mediated activity’ taking into account that “activity is distributed in increasingly dispersed ways; it is often engaged in by loose and shifting communities of people; it has fuzzy and flexible system boundaries, and is mediated by tools and signs that are highly mobile and hybridized” (Leander & Haan, 2011). Learning activities mediated through networked technologies are systematically explored and explained with Networked Learning (NL) studies.

In NL Studies, learning is understood as “learning in which information and communication technology [...] is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources” (Goodyear, Banks, Hodgson & McConnell, 2004, p.1). The underlying ideas of NL align with socio-cultural approaches. Knowledge is understood as emergent and social in nature; interaction and collaboration with others is considered as key activities for constructing knowledge (Hodgson, et al., 2012). Also, the facilitating role of tools (specifically networked

technologies) in the processes of learning and teaching is strongly emphasized and thoroughly studied (McConnell, et al., 2012).

A large proportion of NL studies are devoted to matters of formal learning. Institutional, online, and (semi-)structured learning platforms (such as Massive Open Online Courses [MOOCs] offered by universities) are thoroughly studied (e.g., Kop, Fournier & Mak, 2011) and how certain characteristics of these online platforms (e.g., asynchronous communication) influences the experiences of learners and teachers is often questioned (e.g., de Laat & Lally, 2004). Attention to informal learning practices in social networking platforms is still largely lacking, although it is acknowledged that at school, children learn with and from each other besides the formal school curriculum and networked technologies have a significant place in facilitating and improving these informal learning practices (Sørensen, Danielsen & Nielsen, 2007). Similarly, in NL studies work place or professional learning practices have shown how informal learning experiences account for a great deal of knowledge creation (e.g., de Laat, 2006; Haythornthwaite, 2006).

However, not much attention is given to informal learning that happens in and through the social networking sites described earlier in this text. As argued earlier in the text social networking sites are not merely for pastime; they occupy a significant place in the contemporary culture. As such, they should be acknowledged as sites of participation, sharing, inquiring and discovering where peer-cultures can flourish, interests can develop and expertise can be shared (Ito, et al. 2010). The significance of networks for learning is discussed in the following section.

Network Characteristics and Learning Potential

Personal motivations and goals largely define why and how people participate in social networks and what they do when they are online. In their research on youth and social media Ito and colleagues' identified two motivation factors to participate in online social networks:

friendship-driven and interest-driven ones (2010). In the former, friendships are carried to online platforms while in the latter; a particular interest (e.g., politics, drawing, and gaming) precedes friendship ties and exceeds local, social and cultural boundaries. These two motives serve different purposes, but they are not mutually exclusive forms of networking. In the same study they have also identified different levels of commitment in network participation, depending on what the main reason for participating in the network was. They labeled these aims as following: 'hanging-out' with friends was the most common reason why youths participated in networks, 'messaging around' was a more experimental use of social media directed at exploring new technologies and new ways of self-expression which required a deeper level of commitment in network activities. Finally, they identified young people who 'geek out' which were considered the most committed group; they were developing games, creating novel digital artifacts, sharing expertise in gaming, fandom or another specialized interest.

The motivations and varying levels of social media engagement of youth cannot be understood as an isolated and solely individual practice; it is also important to consider the kinds of relational ties they have in their networks that shape these motivations. A general distinction regarding the types of ties in networks is between weak and strong ones (e.g., Granovetter, 1973; Haythornthwaite, 2000). Relations that are marked by emotional bonding, a shared history, and multiple common others like family and friendships are called strong whereas ties with casual acquaintances are called weak (Granovetter, 1973). There are various ways to operationalize this distinction. For instance, Granovetter (1973) differentiated ties by frequency of being contact; Krackhardt (1992) made a distinction based on the content of interactions and studied 'friendship' versus 'professional advice' ties in a workplace network.

The information flows and knowledge activity with weak and strong ties tend to be different from each other (Haythornthwaite, 2009). Strong ties promote an increased social interaction

and support, frequent collaboration, commitment to common activities and sharing of resources, but some argue that they also lack novelty of experience and knowledge and limit autonomy (e.g., Burt, 2001). Weak ties deliver new information, but they are more effortful relationships to maintain (Haythornthwaite, 2009). Studies suggest that information exchange and support for learning can come from both kinds of ties. For instance, Ito and colleagues (2010) indicate that specific interest groups that are formed to improve their skills and knowledge generally consist of weak ties. However, there is also evidence that strong network ties foster community members' intentions to share knowledge and their willingness to adopt new ideas (Krackhardt, 1992). Besides, there is a vast amount of literature that discusses how homogeneity, geographical dispersion, and density of network contacts impacts on the probability of fostering the innovative quality of networked communities, which does point to the complex relationship between network characteristics and their learning potential (e.g. Coe & Bunell, 2003).

Significance of Egonet Methods for the Study of Networked Learning

Egonet research is a social network analysis method that considers personal social networks from a 'bottom-up' perspective; starting with the individual actor and accounting for the individual's direct relationships (Alexander, 2009). It is a method that maps an individual actor's dyadic relations to other people and the connections between them (Wellman, 1983). The actor in the centre is called '*ego*' and 'others' related to ego are called with their Latin name '*alters*'. The mapping generally consists of two-steps. First, a 'name-generator' is used to evoke and list alters. The criteria to prompt names can vary greatly (e.g., from listing frequently contacted people to people with-whom one shares secrets) depending on the research goals (Alexander, 2009). Second, 'name interpreter' questions generate information about the alters' characteristics (e.g., age, gender, level of education) and about the relationship

characteristics (e.g., kinship or friendship, frequency of meetings with ego, geographical distance to ego).

Network information can be collected by means of a survey or interview, but in either case the focus is not on the traditional individual's attitudes or motivations, but on the respondent's social context and relationships. This method enables the researcher to see the respondent within his/her immediate social context and provides qualitative and/or quantitative data that can be used for rich descriptions, explorations, as well as testing hypotheses and explaining phenomena (Chamberlain, 2006).

The quantitative data collected by means of egonet methods provides not only descriptive information about the respondents and their networks, but is also well-suited for advanced statistical analyses. This type of data is frequently analysed with multi-level regression analyses (MLA) (e.g., Duijn, van Busschbach & Snijders, 1999; Flap & Völker, 2001) as this analyses is typically done to separate several spheres of influence. As Hox says: "individual persons are influenced by the social groups or contexts to which they belong, and the properties of those groups are in turn influenced by the individuals who make up that group" (2010, p.1). These mutual influences between individual and social structure is considered in MLA a 'nested' social structure, with individuals embedded in social groups. MLA makes it possible to separately estimate the influence of individuals' characteristics and the influence of the social structures' characteristics on the outcome (Hox, 2010). A typical example of a two-level data structure occurs frequently in educational research where pupils are 'nested' within schools. With MLA the pupil's characteristics and the school characteristics can separately be assessed for their impact on an outcome variable (for instance success in the standardized tests). Likewise, in the data from egonet methods the personal network contacts are nested under the ego (Duijn, *et al.*, 1999). Therefore MLA is seen as a method to 'separate' network factors from individual factors.

This methodology is well-suited to apply in networked learning studies as it enables to see an individual, ‘a learner’, as a connected person and to map flows of interaction, collaboration and knowledge creation between the learner and his/her learning resources. Our study in the next section is an example for mapping young people’s connections ‘in the wild’.

Current study: the Dutch context, concepts, and research questions

The research presented in this section represents some issues relevant to NL studies and an applied example of egonet method. This research is a part of the Wired Up project (www.uu.nl/wiredup) which is a multi-disciplinary project that studies identity formation and learning in the modern digital world, both for Dutch youth and youth from different ethnic minorities living in the Netherlands. It is a multi-method project in which survey and network interview methods were combined. Here, only the analyses and results of the network part of the survey study is presented.

Young people in the Netherlands are avid visitors of social networking sites with 91% of youths actively using their social network accounts in 2010 (Central Bureau of Statistics, 2011). Our aim with this study was to explore the online ego-networks of youth; particularly to map out with whom these young people kept in touch frequently, to understand the characteristics of these contacts and see the kinds of activities that they did together. As argued earlier in the chapter social network platforms are not specifically designed as, but potent learning environments. In order to reveal this potential for learning we have focused on activities such as ‘asking advice and giving feedback’, ‘editing, creating web-content together’, ‘sharing links, texts, digital artifacts’ and ‘discovering new information’. Questions related to asking, sharing and editing indicate activities that required interaction with network contacts and that were potentially building up knowledge. However, the question regarding discovery was about

understanding the awareness of novel experiences happening as related to active involvement in social networks.

We focused on ‘discovery of new information’ as a measure of awareness of learning, although all other network activities we addressed with our survey are in themselves relevant learning activities as well. Our rationale was that often when people are doing something enjoyable or are busy with daily routine activities they do not realize that they learn (Gee, 2008). Learning is a complex phenomenon with many facets, and discovering new information and the ‘light-bulb moments’ constitute only one facet of this complexity. Discovery of new information was used in the current study as we had reasons to believe that according to the youth we studied, this was a recognizable concept that could be associated with ‘learning’ for them.

In this chapter, while we are showing how certain network characteristics, such as network density, geographical dispersion and homogeneity of network members’ characteristics relate to the possibilities for learning, it is not our intention to generate ‘fixed’ network typologies. Following Coe & Bunell (2003), we suggest that one should make no general presumptions as to how configurations of network relations in terms of, for instance, their spatial organization, density and heterogeneity foster innovation, generate knowledge. From these premises, we answered the following research questions (for detailed explanation of the analyses and results please refer to Ünlüsoy, Haan, Leander and Volker, submitted):

1) What are the compositional features of youths’ online networks?

- Who are the most frequently contacted alters in terms of their relation to the respondents, gender, age, and ethnicity?
- Where are alters located? Do they meet each other regularly online and offline?
- To what extent are relationships between respondents and alters perceived as ‘personal’ (i.e., emotionally close)?

- What topics do they talk about online?

2) What characterizes their networks' structure in terms of density?

3) What is the frequency of their networked interactions?

- How often do they keep in touch via an online platform (e.g., check each other's profile pages)?
- How often do they share online links, photos, and videos?
- How often do they create, edit, and upload digital artifact, texts, and visual materials?
- How often do they ask for advice and receive feedback from each other?

4) Can certain characteristics of these networks predict the (self-perceived) discovery of new information?

Method

Sample

The survey was carried out in the course of 2010 among 1408 students in 7 secondary schools in the Netherlands. The results below come from 1227 respondents (87%) of the total survey population. We have excluded 181 cases in total, because 29 cases (2%) reported no network activity and 152 (11%) did not finish answering the survey or failed to provide reliable and consistent information on their network contacts and activities. Of the 1227 respondents over half (56%) were female. The sample age was 12-18 on average 14.4. The respondents were from different levels of secondary schools in the Netherlands and from different ethnic backgrounds (Dutch 33%, from Moroccan background 24.4%, from Turkish background 12.6%, and other ethnicities 30%). We applied a stratified sampling procedure that yielded data

distributions largely congruent with census data with respect to age, gender and education level and was representative for urban youth population.

Instrument & Procedure

The network section of the questionnaire captured data regarding the *5 most frequently contacted alters* in online network platforms. While asking for the frequently contacted people we have not set a criterion of minimum or maximum frequency of meeting, nor did we specify the kind of networking platform or kind of relationship. The respondents were free to choose any contact they had regular contact with. The likelihood that the frequently contacted people represent strong ties is high, but we did not aim to obtain data particularly on strong ties.

In order to explore who these alters were, we asked about age, gender, ethnicity of each alter. Furthermore, we asked the relation between each alter and respondent (i.e., family, friend, and acquaintance), emotional closeness, location, frequency of online/offline meetings, and topics of conversations. Topics in the networks were captured with a dichotomous (yes-no) 17-item list. As stated above we also asked about the frequency of common network interactions: sharing links, texts, and digital artifacts; asking for advice; giving feedback; editing/creating digital artifact(s); and keeping in touch. The frequency measure to these questions was from 1='almost never', 2='monthly', 3='2or3 times per month', 4='2or3 times per week' to 5='daily'. Finally, we asked how frequently they discovered new information and new things (artifacts, gadgets, platforms) as a result of dialogue with each one of their contacts. The frequency of 'discovery' was measured with the same scale as above. Finally, we asked if the alters knew each other and used this information to compute network density.

Respondents took the survey in their classrooms or a computer room in their school through a template that was facilitated online. Before the survey sessions, instructors explained the

general aims of the survey. During the survey, the instructors remained present to supervise the survey process and answer any questions. Most survey rounds took 30 to 40 minutes.

Data Analysis

The first 3 research questions were answered with descriptive statistical analyses (e.g., frequencies, averages) using SPSS software. The fourth research question was analyzed with multi-level regression analyses to identify significant predictors of discovery using MLwin2.02 software (Rasbash, Charlton, Browne, Healy, & Cameron, 2005). The design was such that the network-contacts were nested in each ego-network. Data requirements were met. A nested structure of our data was confirmed after comparing a simple regression model to the nested model. We observed that the network interaction variables (e.g. asking advice, feedback) were correlated. It is known as multicollinearity and causes inflation of the regression coefficient estimates, overestimating the impact of independent variables on the dependent (Hox, 2010). However, due to the large sample size and the acceptable variance inflation factors (VIF) which were all below 5 and tolerance levels above 0.20 (Williams, 2011), the network interaction items remained intact. We were able to test the impact of each network interaction on the dependent variable (i.e., discovery).

Results

Ego-Network Composition

We obtained information regarding 6135 alters in total. The relationship between the respondents and alters were as follows: the vast majority (77%) were friends, 15% were family members and 8% were acquaintances. Other socio-demographic variables of alters are presented in Table 1.

-Insert Table 1 Here-

The networks were *homogeneous* in the sense that there was a large overlap in all demographic characteristics between the respondents and alters. Regarding gender, 73.7% of alters were the same gender as the respondents. Girls had more gender overlap in their networks than boys. Regarding age, 88.2% of the alters were in the same age group as respondents. Regarding ethnicity, 62.4% of the total network contacts were from the same ethnic background as the respondents.

The *location* of the majority of the alters (77.6%) was in close proximities of the respondents. Figure 1 shows the geographical distribution of alters in migrant and Dutch networks. Migrants had significantly more alters living in the neighbourhood ($F(1)=12.6$; $p<.001$) and outside the Netherlands ($F(1)=18.29$; $p<.001$), whereas in Dutch networks more alters were living in the Netherlands ($F(1)=83.57$; $p<.001$). As was to be expected, the proximity between respondents and alters with regard to geographical location resulted in a strong and significant correlation between meeting alters ‘online’ and meeting them ‘offline’ ($r=.44$; $p<.001$). A small number of alters (2.4%) were only met in online platforms and never in person.

-Insert Figure 1 Here-

Ego-alter relations were mostly characterized as emotionally close ties. Most of the online relationships (53.1%) were reported as ‘very-close’ and ‘close’, 25.5% of relations were ‘somewhat close’, 10.2% were perceived as ‘not close’ and the remaining 11.2% were ‘not close at all’. Dutch and migrant youths’ networks had no significant differences regarding the closeness of ties.

Respondents talked about a wider range of socially-oriented topics in comparison to interest-driven topics. Among the 9-item list of *socially-oriented* and 8-item *interest-driven* topics the average amount of items egos talked with alters was respectively ($M=3.6$; $SD=2$) ($M=1.5$; $SD=1.6$). Socially oriented topics are thus more popular in these online relationships. We have

observed that Dutch youths were talking significantly more about *socially*-oriented topics than their migrant peers ($F(1)=9.49$; $p<.05$). For interest-driven topics there were no significant differences between these groups.

Ego-Network Structure

The density of relationships in ego-networks was high. The majority of alters (69.3%) knew each other. The average density in the sample was $M=0.64$ ($SD=.32$) indicating that most ego-networks consisted of dense relations. An ANOVA showed significant difference in network density scores of Dutch and migrant youths' networks, with migrant youth having denser connected networks ($F(1)=9.03$; $p<.01$).

The Frequency of Network Interactions

We observed that on average 58.2% of the respondents reported that they were engaging in network activities regularly on varying frequencies. The most regularly participated activities were 'asking for advice' with 87.4%, followed by 'sharing/exchanging' 81.8%, 'keeping in touch' 79.1%, 'editing/creating' 78.6%, and finally 'giving feedback' 67.6%. The percentages indicating the frequency per network activity (excluding the responses that reported 'not-active') are shown in Figure 2.

-Insert Figure 2 Here-

Predicting Discovery in Networks

Question four about predicting the (perceived) discovery of new information was answered by means of multi-level regression analysis (MLA). The structure is such that the network characteristics (i.e. level one, henceforth mentioned as 'network-level') are nested under egos (i.e. level two, henceforth mentioned as 'ego-level'). This structure enables to study the

variance parameters *within* ego-networks (i.e. differences per alter) and *between* ego-networks (i.e. differences per ego-network) (for further details refer to Duijn, et al. 1999). For the statistical procedure of the analysis please refer to Ünlüsoy, et al. (submitted).

The total variance of ‘discovery’ was divided between network- and ego-levels (46% to 54%, respectively). In other words, 54% of ‘discovery’ was attributed to the differences between egos’ and 46% to networks’ characteristics, which points to the importance of relational or network aspects for explaining ‘discovery’. The main effect of an ego’s gender was the only significant variable on ego-level, indicating that girls experience slightly less discovery in their networks than boys ($\beta=-.03, p<.05$)¹. On the network-level we found that the amount of ‘interest-driven topics’ significantly and positively ($\beta=.02, p<.05$) predicted ‘discovery’, which means that shared interests lead to more new information. Regarding each network activity item we also found a positive and significant influence on ‘discovery’. From the highest influence to lowest the effects were as follows: ‘sharing/exchanging’ ($\beta=0.32, p<.001$), ‘giving feedback’ ($\beta=0.24, p<.001$), ‘asking advice’ ($\beta=0.22, p<.001$), ‘editing/creating’ ($\beta=0.13, p<.001$) and ‘keeping in touch’ ($\beta=0.04, p<.01$). In other words, the more these activities are performed, the more youth perceive these online relationships as leading to discovering new information. The final model explained 71% of the variance in total, with 45% on the ego-level and 26% on the network-level.

Discussion

The aim of this study was to describe characteristics of youths’ online networks in detail and to study learning possibilities as a result of network participation. The results make evident that the main motivation to be in networks is socially driven, the majority of contacts are friends

¹ β scores are standardized regression coefficients or beta coefficients; they indicate the amount of change on the dependent variable (‘discovery’) at 1 standard deviation change on the predictor variables.

and a proportion of interactions, however small, are about specific interests. These results are parallel to earlier studies that research the relationships between (informal) learning, new media, and online social networks (Ito, et al., 2010).

Learning in online networks seemed a likely result of meddling with network technologies. We inquired whether popular social network activities, representing broad categories of participation, like sharing links, giving feedback and editing/creating artifacts would be related to the discovery of new information. We found that these network activities strongly and positively predicted the discovery of new information. However, we cannot know exactly how our subjects interpreted the ‘discovery of new information’ and thus what exactly is learned from the activity according to the respondents. Nor we can claim that ‘discovering new information’ solely represents learning in all its complexity. Yet, we can say that youths’ encounters with network technologies (phones, laptops, online sites) as well as their participation in these networked communities enable new ways of accessing and processing information. Based on our results we can also say that a more frequent participation in network interactions led our respondents to discover new information.

Whether or not youth also expand their life-worlds with online communities still remains to be seen. Building bridges beyond one’s own community is an important characteristic of learning in the digital age. A widely accepted hypothesis in this regard is that ‘diversity in one’s network provides access to unique learning resources’ (Granovetter, 1973; Burt, 2001). However, we have observed scarcity of diversity in youth networks. Similarities between respondents and alters prevailed (i.e., girls befriend girls; ethnic groups befriend people from same ethnic backgrounds). A likely explanation for this result is that people tend to befriend similar others and the groups based on similar characteristics also tend to be densely connected (McPherson, Smith-Lovin, & Cook, 2001).

The high scores in emotional closeness between our respondents and alters indicated that, the majority of network relationships were ‘strong tie’ relationships. The online groups that these youths built were based on emotionally close ties which are locally based and largely homogeneous. Another possible explanation for the lack of heterogeneity may be that in this age group, youth are still fostering the ties to their immediate community and that being accepted and being similar may allow for a safer exploring of the world.

Our results showed that youth frequently encounter new information even though their networks mostly consist of strong ties. This argument is somewhat in contrast to the ideas of Granovetter (1973) that it is the ‘weak ties’ who bring new information to networks. However, this finding supports our initial stance that we should simply not talk in a priori and universal typologies when describing how networks and their particular ties relate to a potential to be innovative, gain knowledge or form learning communities, but that these relations always need to be contextualized and understood from their local, specific settings and social dynamics.

Regarding egonet methods, as a means to study networked learning, our study shows the possibilities with survey data. Using this method for designing the data collection (i.e. egonet survey) as well as for the analyses had significant advantages. Our survey design guided by an egonet framework enabled us to study various aspects of network composition and network structure. With our analysis we were able to show how personal and network characteristics predicted (perceived) discovery of information in social networks. Other, more qualitative research designs could provide insight into interpretations of relationships, the evaluation of network activities or narratives that describe learning experience in online networks. Whether qualitatively or quantitatively used, egonet methodologies enable the researcher to study learning as a social phenomenon and study the learner in the midst of a web of social relationships.

In the literature the focus is shifting towards studying learning experiences across learning environments (school and elsewhere) and over longer periods of time (e.g., lifelong learning) (e.g. Erstad, 2012; Leander, Phillips, & Taylor, 2010). There is an increased emphasis on studying meaningful learning experiences throughout life, accounting for multiple spaces and places as ‘learning sites’ and for “bridging the binary opposition between formal and informal learning” (Erstad, Gilje, Sefton-Green & Vasbo, 2009, p.100). One way forward in this line of research is to include online networking platforms as a learning context. Here again, an egonet approach can have an added value because it provides insights into the individual in context and produces information about opportunities to learn in complementary, interrelated contexts, including the relations between online and offline contexts (see Leander, De Haan, Prinsen & Ünlüsoy, in preparation).

Concluding Remarks

In this chapter we explored the value of ego-centric network methodologies to study informal learning activities for networked learning research. We have shown the relevance and value of this methodology, even with a limited amount of survey questions as in the study presented. We believe that networked learning as a theoretical and practical framework has successfully guided the research to explore and explain different aspects and affordances of technologies while highlighting the importance of the social context and the communities in which people learn, and it will continue to do so. We suggest that the ‘uncharted’ area of online social networks and the possible learning experiences that occur in these networks is yet another area that deserves attention in this line of research.

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