Analysis of a Korea-based Language Teacher Organization Public Social Networking Service

David Kent

Graduate School of TESOL-MALL

Woosong University, Daejon 34514, South Korea

ABSTRACT

In recent years, studies have emerged highlighting the role of social networking services in the English as a foreign language context of Korea, particularly for teaching and learning, but none examine the role of Facebook in enhancing communities of practice. Therefore, this study undertakes such an endeavor on a Korea-based language teacher organization Facebook group. Social networking analysis came to reveal a group consisting of largely non-engaged members, with several key users successfully bridging the network and promoting engagement and interaction via commenting. Although the most viral posts were disproportionately organizational, professional development clearly emerges as the largest concern for active members. Ultimately, it will be critical for increasing success of the group as a social networking service to establish a means of further engaging all members, including those on the network periphery. To fully meet organizational goals, it will be imperative for key actors to be used increasingly proactively.

Key words: EFL, English Language Teaching, Facebook, Social Network Analysis.

1. INTRODUCTION

1.1 General Appearance

The learning landscape of the nascent 21st century is one where emerging technologies, such as social networking services, are heralding radical changes. These changes have a great impact upon what it now means to be an English language learner [1], and as a result, what it means to be a teacher of English in the English as a Foreign Language (EFL) context [2]. Today, social networking services are ubiquitously accessed, and have become a part of our day-to-day lives. The most used social networking service (SNS) is Facebook with over 1 billion individual user accounts [3]. This service sees a user able to follow or 'friend' others, post, react or reply to comments, as well as join groups of personal and professional interest. Ultimately, the interactions available to SNS participants, like local and expatriate English language teachers in the Republic of Korea (hereafter Korea), allows them to engage with leaders and members of language teacher organizations. This can be via national and local level or special interest groups, and from environments where these teachers may have been previously isolated – geographically, socially, linguistically, and/or professionally [4], [5]. To date, however, SNS analysis of professional English language teacher organization Facebook groups in the Korean EFL context is non-existent, and this paper is intended to serve as a start in building the literature.

For this to be achieved, this paper begins by reviewing recent research surrounding the use of social networking services, particularly Facebook, in the professional development context. This is undertaken to help situate the study, and determine the affordances and potential that such technology can provide to members of Korea-based language teacher organizations. The importance of applying social networking analysis to services like Facebook groups will also be discussed before a quantitative and qualitative analysis of the publicly available data extracted from a Korea-based language teacher organization Facebook group (LTFG) is undertaken. It is through this analysis that the shape of the LTFG network is uncovered, along with the identification of significant actors and the most viral posts. This undertaking also provides a window into how these interactions reflect upon the goals of the Facebook group to highlight if the group is serving as intended.

1.2 Purpose of the study and the research questions

The purpose of this study is to capture a snapshot of posts and interactions from a Korea-based language teacher organization Facebook group, or LTFG, during a particular time period, so that mapping and measuring of the relationships and interactions of group actors can be conducted. This is undertaken in order to allow for an overall picture of the whole network to emerge, while being able to determine the posts generating the most virality and the people who are potentially the most significant actors. It is then through these interactions

* *Corresponding author, Email: dbkent@gmail.com*

and relationships, and the content that subsequently arises, that it can be determined if the group is performing as expected.

Subsequent questions are:

1. How have the interactions, and ensuing emerging relationships, of group actors come to shape the LTFG?
2. How do the groups' most viral posts, and resulting member interactions (comments and/or replies), come to reflect upon the goals of the SNS?

2. LITERATURE REVIEW

"Facebook is the most dominant form of social media in Korea", with 59.8% of internet users engaging with it, "followed by KakaoStory (17.1%), Instagram (10.3%), Band (8.2%) and Twitter (2.4%)" [6]. The prominence of social networking services can see them increasingly used for professional development, as [3] indicate, particularly with the presence of professional organization pages and groups for language teachers emerging, and Facebook offering users the ability to save posted links for later review [7]. For both local and native English language speaking teachers in Korea, Facebook then not only provides a basis for the maintenance of social relations, and an avenue to find colleagues with similar interests [8], but also for locating teaching content and professional development knowledge that has been contributed, or endorsed, by others [9]. In this regard, social networking services harbor the potential to provide substantial value for those teachers who participate in their use, organizations who establish a presence on them, and in turn society in general [10].

Consequently, leveraging social media to take advantage of the opportunities it can provide is essential today [11], [12]. Such online social spaces are places where organizations can gather people of like interest, nurture relationships, test and generate ideas amongst stakeholders, and promote discussion and collaboration amongst members at international, national, and local levels [13], [14]. These kinds of interactions are perhaps crucial for Korea-based language teacher organizations to take advantage of, as their Facebook group member bases largely consist of local English language teachers as well as expatriate English language educators who are both long-term and transient and arrive with or without formal teaching qualifications, as well as other members located nationally and internationally who hold an interest in the teaching of English in Korea. It is also important because this membership profile aligns with the role that the LTFG sees for itself: providing avenues of professional development, encouraging scholarship, and facilitating cross-cultural understanding among teachers and learners of English. Yet, despite the great opportunities that "networked exchange of knowledge and meaningful participation in learning communities" that Facebook use can offer, "little is known about the collapsing of academic and social contexts" that such 'converged media' allows [15]. Nonetheless, pre-service teachers can use SNS to build a professional identity through online learning community participation [7], as well as establish "long-term integration into new communities of practice" [16], which could in turn come to reduce high novice teacher attrition rates [17] by

seeing participants "enter a community and gradually taking up its practices [18]".

To date, analysis of social networks has been applied in a broad manner of ways in education [13], and used to provide an effective means of mapping and analyzing the relationships generated amongst groups of people [19], [20], and this has allowed researchers to distinguish structural characteristics of networks being examined, along with individual attributes of members [21]. The focus lies on examining the patterns of relationships between actors of a network and an examination of their interactions [22], [23] to achieve an understanding of how digitally enabled and maintained connections across vast communities, comprising of immediate *glocal* connections [15], work together in networked actors' lives [13]. In the in-service educator arena, the flow and exchange among actors may be both positive (exchanging information related to lesson plans, professional development opportunities, access to powerful individuals, and the like), or negative (such as access to poor resources, or bad advice), with social network analysis providing a unique framework from which to gain an understanding of these interactions [13], [16], [23] from what may be considered a community of practice.

Facebook groups can offer affordances for informal professional development [3], seeing technology come to provide a platform for members to contribute to, and engage and interact with professional communities of practice in education [24], [25]. Facebook groups can also offer affordances for informal professional development [3], and when linked to language teacher organizations, can help steward knowledge and enhance collaborative and informal learning opportunities among practitioners [24], as these groups are constructed by members coming from a common domain (teaching). They are also formed from a sense of community (sharing activities/information), and arise from a group of practitioners (cohorts) with a common goal [18] of improving their teaching. It is through the analysis of such networks that the relationships and arising interactions evident in these communities can be mapped and potentially better understood [13].

Ultimately then, applying a social network analysis to services, such as a Facebook group, is particularly useful as it allows for insights into the dynamics of these groups as a whole, highlighting the relationships and interactions between active actors in these networks, and making posts generating the most attention and attracting the most responses visible [26]. Further, for Korea-based language teacher organizations that maintain a Facebook group, social network analysis is beneficial as it can help determine where social cohesion might be promoted, where growth in an online community might be cultivated, and as such how the group is meeting its organizational goals, thereby coming to determine if it is functioning both well and as operationally intended [16], [26].

3. METHODOLOGY

3.1 Data collection and analysis

Modeling the approach of [27], a mixed method study relying on quantitative and qualitative data harvesting using

NodeXL Pro [26] was conducted. Quantitative data collection consisted of extracting publicly available data from the LTFG, a directed non-egocentric network, so that social network analysis and content analysis could be undertaken on the information retrieved. Social network analysis of the data was applied to determine virality of posts to the group, potentially significant actors of the group, and the types of interactions that occurred amongst group members. Qualitative analysis was then undertaken by applying content analysis to the most viral posts made by group actors, so that the bearing of these interactions could be better understood. The advantage of using NodeXL Pro for these purposes, as [28] recognizes, is that it provides support for mapping social media landscapes, and provides an advanced means of conducting such analyses through the use of built-in metrics.

3.2 Social networking presence and Facebook group selection

At time of enquiry, the language teacher organization had a social networking presence on Facebook consisting of 14 groups, 5 pages, and 1 person. The 14 groups break down to the LTFG itself (representative of the organization at the national level), 10 local chapter groups, one SIG (special interest group), one international conference group, and one student volunteer group. The five pages are one local chapter page (which represents the organization at the metropolitan city and provincial levels), one SIG page, one conference registration page, one membership committee page, and one news page. The one person is representative of a local chapter. All groups are public, except for one local chapter, the student volunteers group, and the SIG. The LTFG, consisting of 3,197 native and non-native English speaking members, with 7 administrators (or admins), became the primary focus of this study as it was viewed as the group representative of the entire organization. Such a wide social networking presence, and large member base, also made the LTFG an ideal choice for this study. To ensure recency of data, and to restrict data overload, analysis was confined to a date range covering one calendar year.

3.3 Ethical Considerations

Following [29], in "conducting observation-only research on passive participants in the public sphere (participants who are not being interviewed or are completing surveys, nor are the subject of interventions or AB testing)" data is presented anonymized and, as per American Educational Research Association [30] ethical guidelines, without the need for negotiating group consent. Although anonymity is not perceived as essential in the reporting of findings from publicly available data, it is recognized that such concerns are not relinquished simply because subjects of such a study have become passive participants [31]. Affording anonymity to the Facebook group itself, and the organization behind it, and the members who engage with it is also considered an entitlement [32], and provides rationale for use of the abbreviation LTFG throughout this article. Further, anonymity proves especially important in environments like Facebook where participants might be more likely to engage in confessional activity, dissociative anonymity, or online disinhibition [33], [34], and

where research results might potentially come to influence the group positively or negatively [35].

4. FINDINGS AND DISCUSSION

4.1 Whole network data

Data captured by NodeXL Pro shows 680 active actors (nodes), representing 21% of the total 3,197 LTFG members engaging with the group, through 29,284 interactions (edges) across 278 posts. This equates to 0.8 posts per day, or 23 posts per month, with 80 interactions per day or 2,440 per month. In the time period under study, 59% ($n = 403$) of active actors never created a comment, 25% ($n = 168$) never created a reaction, and 9% ($n = 58$) never created either a comment or a reaction. In total, with 680 (20%) active actors out of a group of 3,197 members, this leaves 2,517 (80%) non-engaged, illustrating that, even though the group has a relatively high member count, this does not necessarily translate into a high activity rate for all or even for those who are active actors.

The network is a connected one, with a maximum geodesic distance, that is, the longest unique path between active actors, of 5, giving a mean walk of 2.3 steps between actors. The network therefore illustrates a group in which the spread of information should occur quickly when disseminated and, as it is a connected group, will eventually reach everyone [36]. However, in terms of the type or value of information provided in such groups, core actors may value their 'professional' reputations, and accordingly adjust what and how they post, as well as to whom they might create a reaction, a comment, or a reply. Alternatively, for other actors, it may not be as important as to how they are perceived, especially if they are not representative of the organization operating the group, an administrator, or closely tied to those that are representatives of the organization. Some actors though, may actually want to establish a closer connection with one or more core actors, especially if they are new to the group or Korea, and want to integrate further into the organization, resulting in the possible tailoring of posts by these actors along with targeted attempts at making connections. As [15] reminds us, identity is an attribute that is socially constructed with interaction conceived of as "an engagement between individual and audience, to whom individuals perform and who, in turn, interpret their actions; thus, behind interaction lays an active, prior, conscious and performing self". Therefore, each identity in such a Facebook group is not necessarily representative of the user's true self, but may rather be "fragments of multiple, imported and modified personae" [15]. In such networks, users provide only selective information about themselves [7], as is evidenced elsewhere, for example, in the social media use of Australians to curate their image [37].

Nonetheless, it is clear that the number of non-engaged LTFG members represents a challenge for the organization moving forward. Particularly since the goal that the organization maintains for the network establishes it as a discussion group resting on a platform that seeks, among a connected and networked community of English language teachers, to promote professional development in English language teaching in Korea. Further, as a group with a large

member base, but with a relatively small active actor participation rate, a core member group which acts as a bridge between strong and weak ties in the network can prove to be all the more important [26]. Understanding the role of such actors will help gain further insight into the nature of the group, and allow for the identification of those individuals who potentially come to play a significant role in the network.

4.2 Significant actors

The top 10 bridging actors for the network have been determined by betweenness centrality (see Table 1), as this shows the most likely actors that connect two different nodes within the network [27]. It also illuminates which actor or actors could be responsible for information sharing within the network by showing those that are more likely to be communication paths between others. It is also a useful means of determining where the network would break apart if that actor disappeared. The measure does this by taking into account the connectivity of the actor's neighbors, giving higher values to those bridging clusters, and is also reflective of the number of people who a person connects with indirectly through their direct links [38]. In this network, a lot of actors share common connections, and due to the nature of the group, this is to be expected, with most (80%, $n = 8$) of the top 10 bridging actors representing the language teacher organization in some form or another.

The number of network ties directed toward these actors (in-degree) and ties that they direct towards others (out-degree),

along with closeness centrality which is a measure to determine path length among all pairs of actors, was then taken into account along with Eigenvector centrality. Table 1 shows that each of the 10 actors have relatively high in- and out-degrees, with a mean of 190 and 146 respectively, compared to the network means of 23 and 23 respectively. The relatively high in-degrees indicate that these actors are receiving a lot of connections from many sources, and perhaps this is due to prestige [10] with other actors wanting to be known by these actors, particularly considering that most of them maintain positions within the organization. Also of note is that four of the ten bridging actors have admin roles, and although two of these actors are sending out more connections than they receive, two are not, with one in particular maintaining low prominence. As a result, all except this one bridging actor have high out-degrees, meaning that they are engaging in exchange with many other actors, and are perhaps making others aware of their views, thereby perhaps also coming to influence others as a result. Further, each of the 10 bridging actors have a low closeness centrality of the same value (0.001), compared to the network mean of 0.003. This figure affirms that these 10 actors are closely connected with most other active users of the network, and are also potentially able to rapidly relay information between group members [37]. The Eigenvector centrality value also confirms that most of the 10 bridging actors are very well-connected with others who are also well-connected [40], as the network mean is 0.001 compared to the bridging actor range of 0.006 to 0.008.

Table 1. Top bridging actors in the network

Actor	In-Degree ($M = 23$)	Out-Degree ($M = 23$)	Betweenness Centrality ($M = 866$)	Closeness Centrality ($M = 0.003$)	Eigenvector Centrality ($M = 0.001$)
One	209	198	27137	0.001	0.008
Two[a, e]	187	191	22315	0.001	0.008
Three[a]	187	190	21241	0.001	0.008
Four[a]	199	170	19430	0.001	0.008
Five[c, d, e]	185	164	18672	0.001	0.008
Six[a, f]	191	60	18255	0.001	0.006
Seven[d]	201	156	18165	0.001	0.008
Eight[b]	206	122	16901	0.001	0.008
Nine[d]	175	105	13362	0.001	0.007
Ten	155	105	12473	0.001	0.006
Means	190	146	18795	0.001	0.008

[a]Facebook group admin. [b]national president. [c]first vice-president. [d]local chapter president. [e]committee chair. [f]OP liaison.

Therefore, as not all connections are equal, a connection from a new actor to the network to one of these actors is going to be more valuable than to an actor with only one or no other connections [41]. Connections to more influential nodes are assumed to lend that node more influence than if connected to a less influential node [42]. It also means that the organization could use these members more proactively to spread material throughout the network so that it could be most likely seen by all members relatively quickly. These actors are also in a position where they are able to attract others to the group, and help to increase stickiness (the ability to attract and hold other actors interest) [43], especially if they are actively posting on topics of interest and relevance to the educational community.

This type of actor communication activity is highly relevant, particularly when looking at a network like the LTFG, as the value of being a member of this type of professional network ultimately results from the communication activity occurring between actors [44], [45].

To take into account bridging actors and their communication activities in relation to posts, the types of roles that bridging actors can play on all posts needs to be considered. These roles are: approving or disapproving content by reacting to posts and comments (e.g., creating a like), approving or disapproving other actors' actions on content by being a co-reactor (e.g., co-liker) or a co-commenter, and signifying content itself by commenting on a post [27]. In this regard, the

top 10 bridging actors can largely be classified as commenters, meaning the type of interactions they engage in are predominantly that of signifying content on a post, and approve of content by mostly co-commenting. This is important to note, since group activity consists of posting 4.7% ($n = 278$) of the time, compared to liking posts 53% ($n = 3,160$) of the time, and commenting on posts 41% ($n = 2,433$) of the time. Of the 678 members actively posting to generate the 278 posts analyzed, network members generated a total of 1,268 comments, and received 1,165 comments, while creating 1,710 reactions (in this case all likes), and in turn receiving 1,450 reactions (all likes).

Overall, the top 10 bridging actors are some of the main ones responsible for stimulating interactions among LTFG members, as 50% ($n = 5$) of them are amongst the top 10 network commenters and 60% ($n = 6$) are among the top 10 likers. This indicates that it is essentially a smaller number of key actors (like the bridging actors) that are predominantly accountable for posts and comments that in turn end up generating further additional comments and replies, affirming these actors' roles in promoting discussions and stimulating interactions among members. In fact, the top 10 bridging actors,

who account for 1.5% of the active actor population, were found to have generated 17% ($n = 209$) of all comments, with the amount of comments received by them in return being 22% ($n = 261$), and although they minimally create likes on posts (14%, $n = 246$), they end up receiving 61% ($n = 883$) of all the likes created, highlighting the potential for their posts to gain high visibility amongst all members of the group (see Table 2).

With this in mind, the high number of actors engaging in liking tends to indicate that what actually emerges among group members is a greater passive response to any discussions that develop, but this does not mean that a lack of higher-level engagement with the content is actually occurring. As such, what can potentially be seen here is that bridging actors are providing the network with information, and by holding roles that are more influential, are activating information flow [47]. Whereas, other actors, who are largely passively interacting by liking content, are gaining access to information, ideas, and resources that might otherwise be beyond their social circle [48], and in turn, through this interaction, are themselves potentially acting to bridge connections for other weak ties in the network [49].

Table 2. Percentages relating to bridging actors' comments and likes created and received

Actor	Comments Created ($N = 1268$)	Comments Received ($N = 1165$)	Likes Created ($N = 1710$)	Likes Received ($N = 1450$)
One	45	11	48	44
Two	23	11	27	40
Three	38	5	26	11
Four	8	14	32	26
Five	21	25	13	150
Six	29	64	7	172
Seven	10	18	40	16
Eight	34	61	26	185
Nine	12	31	18	198
Ten	27	21	9	41
Totals	209	261	246	883
Percentages	17 %	22%	14%	61%

4.3 Content virality

To delve further into the kind of interactions occurring amongst members, and to better understand them, content analysis was undertaken on the most viral posts to the group, along with associated comments and replies. Examining such content also allows for an exploration into the potential reasons as to why these posts have emerged as the most acted upon [27], and if these align with the organizational intentions behind the establishment of the group as an SNS.

In order to determine the virality of posts to the LTFG, the number of interactions with each post was taken into account. NodeXL Pro was able to extract both seen and unseen interactions and the relationships between actors from the data. Seen interactions and associated relationships include user liked post/liked post, user liked comment/liked comment, and user commented post/commented post. Unseen interactions and relationships include liked same post/co-liker, and user commented same post/co-commenter. It must also be pointed out here that although shares can be classified as a seen interaction, particularly by Facebook, they were not included as

they can be undertaken with members of groups other than the LTFG and thereby establish interactions/relationships with actors outside the network, and connections beyond the scope of this study [27].

The top five posts with the highest virality, or highest number of seen and unseen interactions between members, contain some crossover (see Table 3). The post with the most virality consisted of 11.6% ($n = 3,400$) of all network interactions, and focused on the organizations international conference in terms of presenter no-shows. This was followed by a post regarding elections, and member self-promotion for first vice-president, at 4.7% ($n = 1,378$). The third highest post (4.5%, $n = 1,302$) focused on providing appreciation for the international conference organizers and volunteers. The fourth highest post (4.1%, $n = 1,209$) again focused on election self-promotion, this time a member standing for president, while the fifth highest post (3.6%, $n = 1,056$) was another appreciation post regarding the international conference, leaving the remainder of posts at 71.5% ($n = 20,939$).

The most viral post poses a question to members, focusing on the banning of no-shows at the international conference from submitting proposals for future conferences. The virality level of the post provides seen interactions consisting of 18 likes, 49 comments and 27 replies, 0 shares, and 202 comment likes, leaving 3,104 unseen interactions. Comments and replies centered around: expressing anger towards no-shows and seeing them as inconsiderate and unprofessional; criticism of organizers; excuses made for no-shows; calls for bans; whistleblowing of no-shows with their affiliation; a need for better communication; several means to solve the problem; and apology with follow-up offered by organizational representatives. Overall, there was little empathy for no-shows, although there is an understanding that events can happen, with the consensus being that attendees should have a backup presentation to attend. The attempt by organizational representatives to apologize was really also a justification of the voluntary nature of the organization and conference itself [50], [51]. It is surprising to see that no real policy appears to be in place regarding such events, particularly since the TESOL international for association has a long-standing banning policy no-shows at regional conferences [52]. All of this can be tempered by the third and fifth highest virality posts, which focus on providing thanks to the international conference organizers, showing that to these members, the event was likely valuable at both the professional and personal level. Yet, as the no-show post attracted the most attention, it is likely that network members who may never react or comment upon posts would have done so. This illustrates that the topic and nature of the post, being related to engaging in professional development via conference attendance, is also one that is very important to group members overall. The attraction of comments and reactions toward this post also show that active members of the LTFG are interested in professional development events, and view the in-country international conference as a major avenue for this. It is also particularly poignant to mention that the conference is held on a weekend, as teachers in Korea are generally not permitted to take weekdays off.

Therefore, the work culture that these educators find themselves in may see those who might want to present at, or attend, the international conference as an endeavor taking up valuable free time. This notion simultaneously highlights both the importance of professional development for these members who attend and participate, and provides a level of understanding as to perhaps why there is a lack of empathy towards no-shows at such events. However, to be fair to the organization, it was later indicated on this post that only two presenters were not able to fulfill their obligations on the day, with one of these actually being a pre-event cancellation rather than an event no-show [53].

Table 3. The five posts with the highest virality

Posts	Interactions	
Themes (subthemes)	*n*	*%*
1. International conference (presenter no-shows)	3400	11.6
2. Council elections (member self-promotion)	1378	4.7
3. Appreciation (international conference organizers/volunteers)	1302	4.5
4. Council elections (member self-promotion)	1209	4.1
5. Appreciation (international conference organizers/volunteers)	1056	3.6
Remaining posts	20939	71.5
Total	29284	100

The themes of the second and fourth most viral posts cross over, focusing on organization elections and member self-promotion for council positions. The virality level of the second highest post shows seen interactions of 51 likes, 8 comments and 0 replies, 0 shares, and 9 comment likes, leaving 1,310 unseen interactions between actors. As for the fourth highest post, there are 47 likes, 10 comments and 0 replies, 0 shares, and 17 comment likes, leaving 1,135 unseen interactions between actors. Comments and replies for the second highest virality post were largely best wishes and delight, followed by acknowledgement of suitability for the role [54], and while some comments and replies for the fourth highest virality post consisted of best wishes and delight, there was some interest and support for the poster's campaign position as well as some heckling. What the comments and replies highlight here is that these members are interacting with the network at the level of a close-knit group. It is also evident from the 'You have my vote!' [55] comment, that organizationally active members are supportive of other organizationally active members running for positions of responsibility. Essentially, this also demonstrates that for a newcomer to the group, regardless of skills and time in-country, it will likely prove difficult to run for an office or seat within the organization without having put in the time and effort to become well known to key members at both the national and local levels.

The themes for the third and fifth highest virality posts also cross over, but these focus on expressing appreciation to the organizations international conference organizers and volunteers. The virality level of the third highest post shows seen interactions of 50 likes, 4 comments and 1 reply, 0 shares, and 6 comment likes, leaving 1,241 unseen interactions between actors. As for the fifth highest post, there are 45 likes, 5 comments and 4 replies, 0 shares, 9 comment likes, leaving 1,443 unseen interactions between actors. Comments and replies for the third highest virality post largely focus on providing further thanks to other individuals, thanks to the poster for their effort (being a long-standing representative of the organization), and an acknowledgement of the appreciation from the organizers and volunteers themselves [55]. Again, the interactions on this post are reflective of a very close-knit group, demonstrating aspects of clique formation with only those members involved with the conference, and tagged in the post, actively commenting, with like responses from a wider member base allowing the post to spread to a greater audience.

This spread also comes to help the LTFG member base to identify member roles in the organization by those named, and actively commenting on the post. The simple nature of the post, and central responses from the core members tagged in the post, also shows that, for this post to go viral, member linkages throughout the network would be high for these actors.

Turning now to the comments and replies to the fifth highest virality post, these are largely centered on the poster's future activities regarding staying in-country, acknowledgement of the appreciation provided by the post, and an acknowledgement of the value of the poster to teaching English in Korea [57]. What emerges in the comments and replies here is a focus on the actor. It is interesting to note that this actor mentions in the comments of their post that in several months, they will be returning to their home country [58]. This is interesting on several levels, as the influence that this actor holds in the group is high, as evidenced by the nature of comments on the post, and the wider audience liking the post, which in turn helped to spur its virality. In addition, the poster is the top most bridging actor of the LTFG, and is also responsible for creating the most comments (3.5%, $n = 45$) and the most likes (2.8%, $n = 48$) of any individual in the network. As such, there is a threat of a highly negative potential impact regarding the loss of this actor to the group. However, due to the long standing connection to Korea, and with multiple years spent working in-country and being of Korean heritage, it is expected that this actor will likely maintain a strong tie to the group for some time, perhaps allowing for a gradual rather than sudden disconnection, with the loss of this node mitigated by the fact that this actor does not hold an organizational post or currently play a significant role in the organization itself. This also highlights the nature of social networks as constantly evolving and changing, as relationships are formed or abandoned [59], and provides an opportunity to be aware that it is the loss of such nodes, especially in highly centralized networks, that can lead to a disruption or complete failure of a network.

5. CONCLUSION

Social network analysis, in terms of examining the engagement and interactions of group members, was employed throughout this research in order to determine the overall shape of the LTFG network. This was achieved by reviewing network metrics, and using these to determine those actors who are potentially the top ten most significant, while taking into account the engagement of all group members allowed for the identification of the top five most viral posts. Content analysis was then required to further provide insight into the bearings of these posts. In this manner, a clearer picture regarding the workings of the language teacher organization Facebook group as a social networking service could emerge, with the resulting member relationships and interactions reflecting the nature of the service, and allowing a means to determine if the group is functioning as intended.

As [60] remind us, key users in terms of connectivity and communication activity tend to play crucial and significant roles in the shaping of a network, and this was found to be the case for the LTFG, with several significant actors emerging. The evidence available shows bridging actors actively engaging with network content by co-commenting on posts, and signifying content by making comments, as opposed to engaging passively with posts by creating reactions. These members could be used more proactively by the LTFG, as these actors would be able to rapidly generate information flow throughout the network as well as increase stickiness amongst group members. It is also clear, from the most viral post, that professional development is important to group members, and saw those who might not ordinarily post or react to content become engaged. Keeping this in mind, it is well recognized [25], [44], [45] that the inherent value of being a member of such professional networks ultimately results from the levels of communication actively occurring between actors. However, the group was found to consist of a large number of non-engaged members, and as such, one challenge for the organization is to establish a means for these members to increasingly be able to participate and interact with the group on a number of professional development levels. This might in turn allow for professional development topics and aspects to emerge more concretely across the most viral posts of the group, and act as a driving force that spurs increasing participation amongst group members. Taking into account such factors will perhaps be critical for the LTFG to continually maintain itself as a successful SNS. That is, if it is going to meet the goal of promoting professional development in Korea, which for many 21st century teachers might mean becoming an integral part of their personal learning environment (PLE) [13], [61].

That said, several limitations may have impinged upon this study. First, the owner of the group is an official organization which in a sense can be viewed as sponsoring the group. Second, membership of the group is not controlled as it is open to all, language teacher organization affiliated or not. Third, NodeXL Pro can only extract publicly available data which has been shared by members to the Facebook group, and their individual profiles, so details that might shed more light on the kinds of members forming the LTFG and their personal background was not available (for example workplace, location). Fourth, significant actor credibility needs to be taken into account in terms of their links to the organization and what this might mean for how they conduct themselves in regard to an online presence. Implications of this manifest in seeing the LTFG consist of significant actors who predominantly hold language teacher organization roles, and it is not surprising that many of the most viral posts also come to reflect this. Nor is it surprising to see that the actors actively commenting on the most viral posts are therefore some of the same ones. Consequently, the roles of these actors, as bridges in the network, help to ensure that these posts spread relatively quickly. This is evidenced by the number of unseen interactions uncovered, as well as the number of reactions to posts created by a wide range of LTFG members not actively commenting or involved with the language teacher organization in organizational roles. However, as we are still left with a limited understanding of the types of content that is perhaps important to those actors who form the wider LTFG member base, a further study providing an analysis of all posts to the timeline may be warranted. Such a study would assist in establishing an

understanding of the type of content that is likely to be considered valuable to members overall, and perhaps also provide insight into ways the LTFG might better engage those members on the network periphery. It will also allow for a means to determine how group members are ultimately using the service, and if the group is actually functioning as a PLE for them. At the same time, it would provide a means from which to determine the overall function that the organization plays in terms of group administrator involvement to support the endeavors of those members who are actively engaging and interacting with the group.

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David Kent
After receiving a B.A. and M.A. from Western Sydney University in 1992 and 1996 respectively, and a Graduate Certificate in TESOL from Charles Sturt University in 1995, David was awarded a doctorate from Curtin University of Technology in 2008. Since 2006, he has been working at the Graduate School of TESOL-MALL, Woosong University, where his main research interests include multimedia and e-learning.