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The Reform of Vocational Education and Training in Finland: Insights from Twitter

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Abstract

This paper aims to analyse and describe relationships and communication in Twitter in relation to vocational education and training reform in Finland. Data were collected during the early implementation phase of the reform from January 2018 to early June 2018. The data included 2400 tweets containing the hashtag #amisreformi (VET reform). Social network analysis was utilised to study the network and communities. The main themes of the tweets were analysed using thematic analysis, and automated sentiment analysis was used to examine the tones of the tweets and public opinion. The study showed that the official actors were central influencers in the network that lacked connectivity. Overall, the sentiment analysis showed favourable opinions towards the reform. The main themes of the tweets were related to cooperation between education and work, a new kind of teachership and learning and skills.

Keywords

reform, social media, public opinion

1   Introduction

Educational reforms and improvement in the quality of education have become important vehicles aiming to promote international economic competitiveness, and to improve domestic development (Gaziel, 2010). A number of key issues and drivers are behind vocational education and training (VET) reforms, those including numerical indicators, experiments and cross-country policy learning (McGrath & Lugg, 2012). Statistical and experimental reform approaches are based on a more technical understanding when the policy learning approach promotes policymaking based on public dialogue, but eventually policy decisions are both technical and dialogic processes (McGrath & Lugg, 2012).

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The Finnish government embarked on an extensive reform of VET in 2015. The new legislation came into force in January 2018. It led to changes in the steering and regulation system, and it introduced a new funding model focusing on qualifications and employment to improve the effectiveness of VET (Ministry of Education and Culture, 2018). The reform coincided with significant spending cuts in the VET budget. The main aims of the reform were to adopt a new customer-oriented and demand-driven approach, to decentralise decision-making to education providers and to increase work-based learning in order to better match the needs of the world of work (Ministry of Education and Culture, 2018). This seems to be a notable change; traditionally, Finland has represented the statist skill formation regime that consists of a low involvement of employers in VET and a high degree of public commitment to VET (Busemeyer & Schlicht-Schmälzle, 2014).

Implementing the policy seems to be the most difficult part of the reform process (McGrath & Lugg, 2012). Lindensjö and Lundgren (2000) developed an analytical model of an educational reform process that consists of two different contexts. According to Lindell (2006), the context of formulation relates to central level policymaking, which establishes the goals of and targets for the reform. The context of realisation focuses on administration and management. Accordingly, in the first phase the interest groups, stakeholders, voice their opinions and with the government, opposition and national authorities aim to achieve consensus. Independent from the first phase, in the second phase, local stakeholders and practitioners bring up possible conflicts and problems. Policy reforms may fail to be implemented if policymakers are suddenly confronted with a public backlash (Busemeyer et al., 2017). Therefore, understanding public opinion is important in order to assess the chances of the reform being successful (Busemeyer et al., 2017).

In the context of education policy, public opinion, i.e. individuals' policy preferences and attitudes, are shaped by (self-)interests and political attitudes, as well as by the institutional set-up of the education system (Busemeyer & Garritzmann, 2017). However, it is not always clear whether individuals rather support those kinds of institutions that already exist or policies that are different from the institutional set-up (Busemeyer & Garritzmann, 2017). Usually, if the performance of existing institutions is deemed to be sufficient, no large-scale changes are demanded (Jacobs and Weaver, 2015). It has been suggested that policy makers could use social media to support the implementation processes of reforms (Joseph et al., 2017). Social media has also proven to be a powerful tool for protesting against educational reforms and policies in recent years (Berry and Herrington, 2012). As a whole, examining the social media data may provide a better understanding of how policies are perceived (Joseph et al., 2017).

This paper seeks to examine VET reform in Finland by collecting Twitter data and analysing Twitter discussions. Unlike many other social networking sites, data is publicly shared in Twitter. This enables the mapping of public opinion. In Finland, Twitter has approximately 500000 users and active Twitter users include top-level politicians, experts and journalists (Ruoho & Kuusipalo, 2018). Similarly, Burson-Marsteller's (2017) global study recognised Twitter as the main social media channel for governments and ministries. Thus, Twitter's user base is highly skewed and far from being representative of the population at large (Jungherr et al., 2017). Although Twitter data does not represent the entire population, investigating the opinion of Twitter users may be especially interesting, since they represent a form of activated public opinion (Ceron & Negri, 2016). This kind of public opinion often consists of stakeholders attempting to build support for their views, and they are also the ones who are able to promote or contest reforms (Ceron & Negri, 2016). Additionally, Twitter offers a tool for individuals and policymakers to interact without intermediaries, and the use of social media allows any individual to become an important catalyst of collective action processes in their own social networks (Bennett, 2012). In order to provide information about influencers and public opinion from Twitter data, this study formulated the following research questions:

(1) Who are the main actors and influencers in Twitter discussions related to the VET reform in Finland?

(2) What are the tones and the main themes of the tweets related to the VET reform?

2 Methods

2.1 Ethical considerations

Twitter is an open platform where communication is based on tweets that have a limited character count (currently 280 characters). Using Twitter data raises a number of ethical challenges (Webb et al., 2017; Williams et al., 2017). Although interaction in the forms of tweets, likes, mentions and retweets is public, it is questionable whether this justifies collection, analysis and reproduction of tweets for the purposes of research (Webb et al., 2017). Webb et al. (2017) discussed good practice procedures for the publication of Twitter data related to informed consent, minimising harm and anonymization. They concluded that, in academic work, researchers often rely on Twitter's own Terms of Service as providing informed consent for data collection. For example, Twitter's (2018) Privacy Policy states that:

Twitter broadly and instantly disseminates your public information to a wide range of users, customers, and services, including search engines, developers, and publishers that integrate Twitter content into their services, and organizations such as universities, public health agencies, and market research firms that analyze the information for trends and insights.

However, informed consent might be necessary especially if direct quotes, original tweets, usernames and photos are published (Webb et al., 2017). In the UK, Williams et al. (2017) conducted a survey about Twitter users' concerns over their Twitter data being used by researchers. The survey showed a general lack of concern about posts being used for research purposes. However, a clear majority of Twitter users expected to be asked for their consent if their tweets were published in a publication, and they requested anonymity. Still, anonymizing and altering tweets is an issue, since Twitter guidelines prefer a full reproduction of tweets in publications and Twitter users, in an anonymous form, can be easily found through an online search (Webb et al., 2017; Williams et al., 2017). To minimise harm and to avoid the difficulties of anonymizing tweets, original tweets are not published in this paper. The user accounts are also anonymized in the data analysis, and no individuals are identified unless they represent official authorities.

2.2 Data collection

The data collection focused on the hashtag #amisreformi (VET reform) that was officially promoted (see e.g. Ministry of Education and Culture, 2018). The data collection began on 29 December 2017, right before the new legislation came into force at the beginning of 2018, and it continued until 7 June 2018. In the beginning of June 2018, interest groups and organisations started to prefer using the hashtag #uusiamis (new VET). During the data collection period, we collected a total of 2400 tweets with the hashtag #amisreformi (VET reform).

Two different tools were used to collect the data. The first tool, TAGS, was developed by Hawksey (2018); it is a free Google Sheet template that automatically collects Twitter data. The second tool, Luuppi (The Loop), is a machine learning-based tool developed at Turku University of Applied Sciences. It collects time, text, author, domain, URL, the likes and shares, and the type of tweet (tweet or retweet). Furthermore, it classifies tweets as having positive, negative or neutral sentiment.
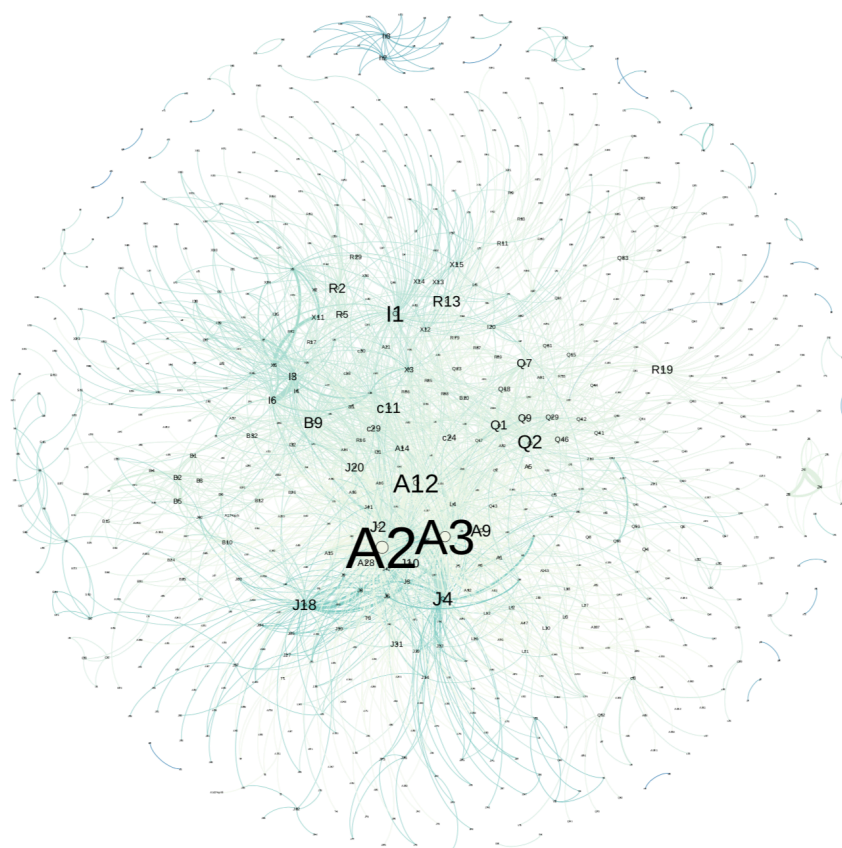
2.3 Data analysis

Firstly, this paper aimed to determine the influencers, i.e. the persons or stakeholders, who form networks of influence via their interactions and who, thereby, affect the ways that information is shared (Willis et al., 2015). Social network analysis (SNA) was used to analyse that data. SNA allows for modelling Twitter users as network nodes that are interconnected through discussions and retweets (Jussila et al., 2014). The influence domain of a node is the number of nodes it can reach. Centralisation was measured using the node's in-degree influence, which is the number of nodes pointing to it, and the node's out-degree influence, which is the number of nodes it points to (Himelboim et al., 2017). The software programme, Gephi, was used to layout the communities, to calculate the metrics for the network nodes and to adjust the visualisation of the network (see e.g. Bastian et al., 2009; Jussila et al., 2014). The community structure was extracted based on the modularity detection algorithm and optimisation (Blondel et al., 2008) and the network visualisation of VET reform was drawn using the layout algorithm by Fruchterman and Reingold (1991).

Secondly, the tones and the themes of the tweets were investigated to provide information about public opinion and to identify key issues related to the VET reform. The sentiment of the tweet, i.e. an individual's state of negative or positive feeling spread through social interaction, was determined by using sentiment analysis (see e.g., Bae and Lee, 2012; Anwar Hridoy et al., 2015; Jussila et al., 2017a, 2017b) that was integrated into the data collection tool (The Loop). In a previous study, the tool was found to provide the most consistent results in a sentiment analysis that compared different tools for the Finnish language (Jussila et al., 2017b). The content of the original tweets was coded inductively, and the content and the themes were analysed based on thematic analysis (Braun and Clarke, 2006) to summarise the main themes.

3 Results

3.1 Main actors and influencers

The SNA showed that the network consisted of 804 Twitter users, with 2509 connections between them. Figure 1 shows a network visualisation of the Twitter data referencing the hashtag #amisreformi (VET reform) during the implementation phase between January and June 2018. The circles, the nodes, are Twitter users and the lines joining the nodes, edges, are the interactions between them, such as replies, mentions or retweets. The lines also link clusters of tweets and they show the nodes that are more central to the network.

Figure 1   Network visualisation of the VET reform.

As seen in Figure 1, the network structure is relatively sparse, with few central hubs (e.g. A2, A3, A9, A12, I1, J4, J18, Q2), and many of the nodes only have a few connections to other nodes. The central nodes, the possible influencers, include the Ministry of Education and Culture (A2), the Minister of Education (I1), the Finnish National Agency for Education (A3) and the agencies' management (A12, A9). The central influencers also include stakeholders, such as the Federation of Finnish Enterprises (Q2), the Finnish Association for the Development of VET (B9) representing VET providers, and the Trade Union of Education (R13) representing vocational teachers.

When the network is filtered based on incoming connections (replies, mentions) from one node to another, ranging from 2–170 connections, the network size reduces dramatically to 55 nodes and 378 edges (Figure 2).
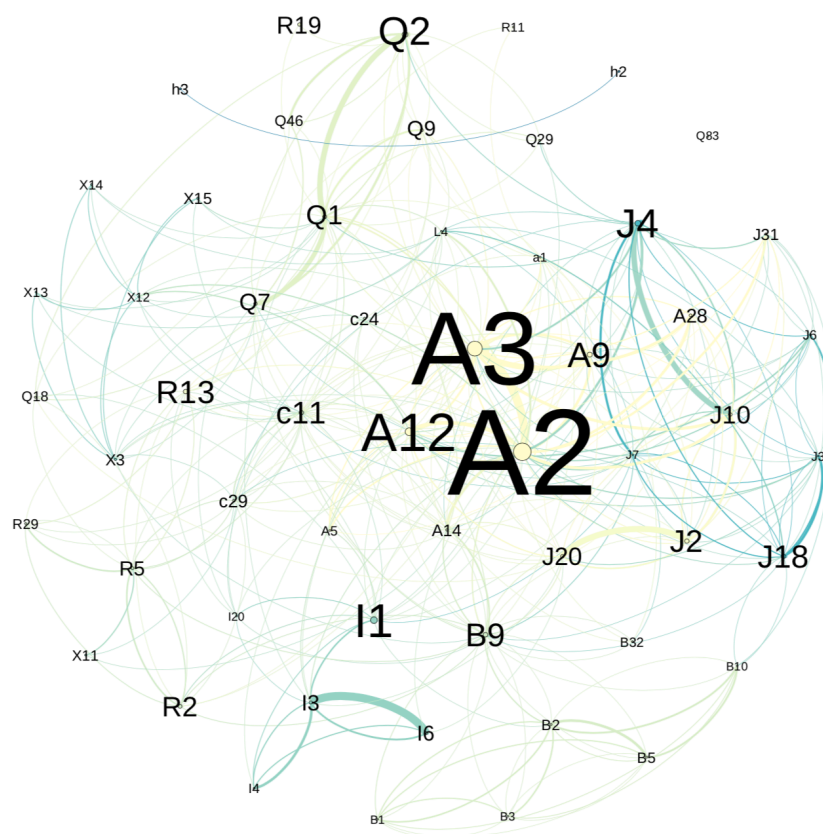
Figure 2   Network visualisation of the VET reform in-degree network.

The network visualisation in Figure 2 indicates that relatively few communities discuss VET reform, although many individuals have an opinion on the topic (see Figure 1 and Figure 3). Most discussions are targeted towards A2, A3, A12 and A9; these actors belong to the same community and represent the official actors. There are 170 incoming connections to the Ministry of Education and Culture (A2), 143 incoming connections to the Agency for Education (A3), also including management's 71 incoming connections (A12), and 44 incoming connections (A9). Other nodes, with approximately 40 or more incoming connections, include the Minister of Education (I1), the Federation of Finnish Enterprises (Q2), the Trade Union of Education (R13) and a networked project to support the teaching and guidance staff at schools and in workplaces (J4). As a whole, the community J seems to include vocational education providers, their management and some actors involved in vocational teacher education.
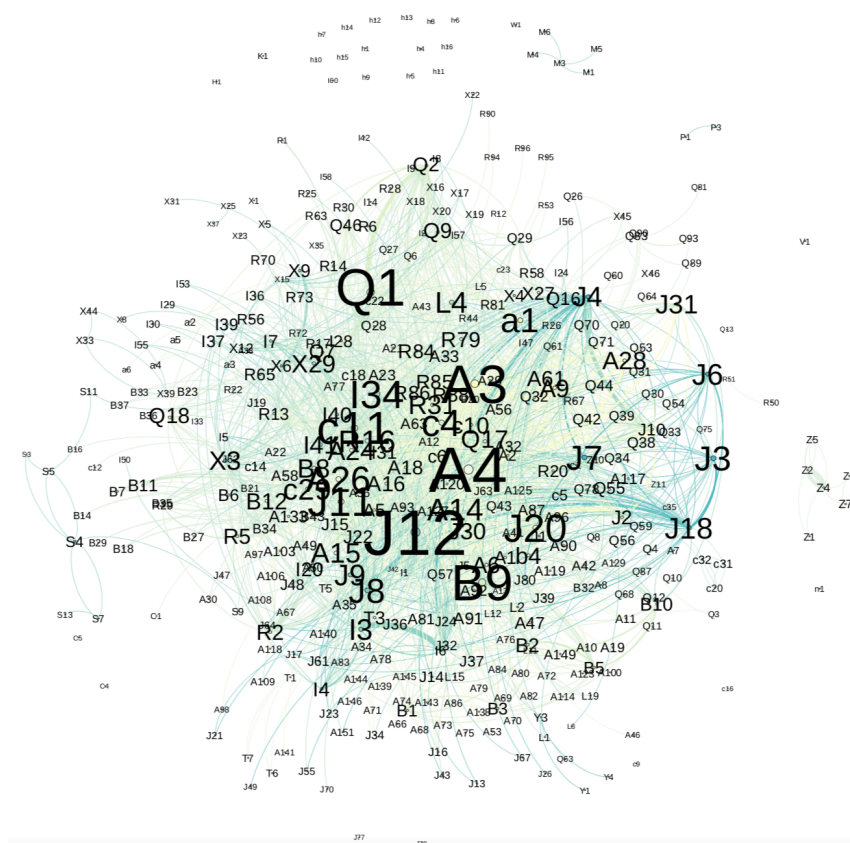
Figure 3   Network visualisation of the VET reform out-degree network.

Figure 3 depicts the out-degree centrality of the VET reform to show who make their views known to others (e.g. mentioning or replying to others, monitoring and retweeting messages by others). Here, the most central Twitter users are active individuals belonging to different communities, including A4 (out-degree 48), J12 (out-degree 43) and Q1 (out-degree 40). A total of 406 nodes and 1738 edges are included in the directed graph; the number of out-degree ranges from 2 to 48.

3.2 Tones and themes

Opinion mining as a sentiment analysis showed that the majority of the tweets or retweets were neutral (59.15%) or positive (27.22%). Most of the tweets referred to the changes and the implementation of the reform at general level. More specifically, *cooperation between education and work* was promoted and considered to be an essential part of the VET. This was also reflected in tweets about *a new kind of teachership* that would require supporting students and their individualised learning in versatile learning environments. Moreover, *learning and skills* were highlighted in the tweets. Students' learning opportunities and experiences were mentioned as being important, but on a more general level, different kinds of future skills were discussed; for example, digitalisation, including both digital skills and tools, was considered to be important for students, vocational teachers and workplace instructors. Information about new qualification requirements was also shared, and some tweets showed support for new and more flexible modularised qualifications.

It seems that, in general, the expressions related to the VET reform indicated favourable opinions, since the negative sentiment clearly had the lowest share of tweets (13.63%). However, some issues seemed to elicit negative opinions about the VET reform. Still, the negative opinions were very isolated; they did not represent the overall discussion conveyed through Twitter. Firstly, the reform was closely connected to budget cuts that have forced the education providers to cut their workforce. Therefore, the new kind of teachership was also contested and perceived negatively. In a few tweets, the diminishing amount of teaching, virtual learning environments, more individualised learning paths instead of communities and the need for more self-directed learning were considered to be challenges. Some tweets also criticised the change in vocational teachers' contracts and salary to an annual model consisting of 1,500 hours of work a year. It was also considered questionable to expect workplaces to participate in and take responsibility for VET in general. In addition, the workplaces' readiness to offer learning opportunities and support was questioned and the quality of learning was considered insufficient due to the students' lacking basic knowledge and skills. Furthermore, this was connected to the teachers' pressure to pass students, which was feared to be further worsened by the new funding model. In some individual tweets, the rush in preparation and implementation processes, the amount of regulation and the reform of the education system as separate entities (general education and VET) were criticised.

4   Conclusions

The aim of the present explorative study was to gain an understanding of the influencers and public opinion on the VET reform in Finland based on Twitter data. The study found that the official actors were the key actors and influencers in the network, which was characterised by a lack of connectivity and isolated views and opinions. However, it seems promising that the few central hubs that attracted a number of connections and affected the information flow also included stakeholders that promoted the reform. Overall, public opinion about the reform seemed to be neutral or positive; negative opinions were rarely expressed in this data set. The topics were related to cooperation between education and work, teachership and learning and skills.

In a further phase of this study, the longitudinal study design could allow for identifying changes in these discussions over time. The thematic analysis could also benefit from a wider data set and the automated sentiment analysis could be further studied and compared with manual coding. Previous research has shown that there are differences between human evaluators and automated tools, although, eventually, algorithms seemed to provide more uniform analysis than human evaluators (Jussila et al., 2017b).

The present study and the approach taken has been an attempt to add to the current body of knowledge about reform processes and public opinion. While the generalisability of the results is limited, the approach can be further developed and implemented in different contexts.

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