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Researchers as Knowledge Brokers: A Step toward Research-Informed Policy? Lessons from the Israeli Case

Rony Ramot
&
Gadi Bialik
Tel Aviv University
Israel

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Abstract: In the 1970s, the role of "chief scientist" was established in Israel as part of a knowledge mediation model aimed to promote research-informed policy and narrow the academia-field-policy gap. This paper examines how when researchers cross the boundary toward a policy role and serve as knowledge brokers, they may promote research utilization in policy. This sheds light on a key issue in the field of education research, specifically, what conditions or circumstances contribute to the maximization of research utilization and the implementation of research-based policy recommendations. Using qualitative methodology, we conducted semi-structured interviews with past chief scientists and analyzed newspaper articles to understand the complex nature of the role and to propose practical suggestions for improving its construction in future policy beyond the Israeli context. Despite the positive aura surrounding the common use of intermediaries, the issue of promoting such entities at the national educational level has not yet been realized in a coherent, stand-alone policy globally.
Keywords: mediation; knowledge brokering; research use; field-policy-research gap

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Los investigadores como *brokers* del conocimiento: ¿Un paso hacia una política basada en la investigación? Lecciones de un caso en Israel
Resumen: En la década de 1970, el rol de "científico jefe" se estableció en Israel como parte de un modelo de mediación del conocimiento destinado a promover políticas informadas por la investigación y reducir la brecha academia-campo-política. Este artículo examina cómo cuando los investigadores cruzan la frontera hacia un rol político y sirven como *brokers* del conocimiento, pueden promover la utilización de la investigación en las políticas. Esto arroja luz sobre qué condiciones o circunstancias contribuyen a maximizar la utilización de la investigación y la implementación de recomendaciones de políticas basadas en la investigación. Utilizando una metodología cualitativa, llevamos a cabo entrevistas semiestructuradas con antiguos científicos principales y analizamos artículos de periódicos para comprender la naturaleza compleja del papel y proponer sugerencias prácticas para mejorar su construcción en políticas futuras más allá del contexto israelí. A pesar del aura positiva que rodea al uso común de intermediarios, la cuestión de promover tales entidades a nivel educativo nacional aún no se ha materializado en una política coherente e independiente a nivel mundial.
Palabras-clave: mediación; *brokering* de conocimientos; uso de investigación; brecha de academia-campo-política

Pesquisadores como *brokers* de conhecimento: um passo em direção a uma política baseada em pesquisas? Lições de um caso em Israel
Resumo: Na década de 1970, o papel de "cientista-chefe" foi estabelecido em Israel como parte de um modelo de mediação de conhecimento com o objetivo de promover políticas informadas por pesquisa e estreitar a lacuna acadêmica-campo-política. Este artigo examina como, quando os pesquisadores cruzam a fronteira em direção a uma função política e atuam como *brokers* do conhecimento, eles podem promover a utilização da pesquisa nas políticas. Isso lança luz sobre quais condições ou circunstâncias contribuem para a maximização da utilização da pesquisa e a implementação de recomendações de políticas baseadas em pesquisa. Usando metodologia qualitativa, conduzimos entrevistas semiestruturadas com cientistas-chefes anteriores e analisamos artigos de jornais para compreender a natureza complexa da função e propor sugestões práticas para melhorar sua construção em políticas futuras além do contexto israelense. Apesar da aura positiva em torno do uso comum de intermediários, a questão da promoção de tais entidades no nível educacional nacional ainda não foi realizada em uma política autônoma e coerente globalmente.
Palavras-chave: mediação; *brokering* de conhecimento; uso de pesquisa; lacuna de pesquisa-campo-política

Introduction

Research use has engaged researchers, policymakers, civil-society organizations and foundations and field personnel for many decades (Gersten et al., 1997; Horner et al., 2005; Weiss, 1979; Wyse et al., 2018). Each side has a different motivation for research utilization, but the common assumption is that research can be of great value for improving and ameliorating education policy and educational practice (Weiss, 1979). Finding a way to use research in a better way may also bridge the known gap between research and policy and research and practice (Slavin, 2002), which is recognized as a serious global problem.

Educational research scholarship offers many ways of promoting research use, and previous studies have reported the growing call for research-based educational policy and practice (Coburn & Penuel, 2016; Fullan, 2014; Hargreaves, 2000). Most methods rely on the possibility of translating educational research into practice and try to assimilate it into policymaking processes. The underlying principle of all these studies is that there is a need to develop a simple and effective way to promote the translation, transfer, assimilation, and implementation of research (Horner et al., 2005; Qi & Levin, 2013; Turnhout et al. 2013; Ward et al. 2009a). One way to promote the translation of research imported from other fields, such as social work and nursing, is to use knowledge brokers. This idea is derived from the fact that none of the existing parties in the equation have the ability to perform the translation function optimally and communication between the parties is also insufficient; therefore, a separate third player must be harnessed (Kramer & Wells, 2005; Oldham & McLean, 1997; Ward et al., 2009b).

Between the years 2008-2018, the William T. Grant Foundation, for example, shifted its research interests as presented in its applicant guidance several times. Each change reflected the main research and theoretical lacunas in the field at a particular point in time, and as a result we uncover the foundation main interest in research utilization for promoting high educational outcomes for all children. While in 2008, the main research lacuna in this field was: "Why isn't research used?" which the foundation guidance was more broadly referred to as "Under which conditions is research used?" highlighting contextual factors and multi-dimensional ecological relationships. Today, the research focus has shifted to understanding "how these conditions can be created". One of the main research trajectories under this focus is pursuing actionable strategies to improve the use of research. The case of the "chief scientist" (CS) as a knowledge mediator is such one strategy which has not yet been investigated.

In 1974, the Israeli government passed a decision that alongside each government ministry and its minister, a CS would be appointed to promote integration of knowledge and science in the civil service (Katzir, 1998). Thus, the CS became a mediator, a boundary spanner (Howey & Zimpher, 2006), or knowledge broker (Barnett, 2003), performing two roles simultaneously, researcher and policymaker. This step preceded the period of extensive research discussion on knowledge brokers, to the best of our knowledge, and therefore constitutes an interesting case for examining a period of more than five decades. This is a qualitative study based on semi-structured interviews and analysis of publicly available newspaper articles seeking to analyze the role of the CS in the Ministry of Education (MOE) in Israel as a mediator of research knowledge for policymakers.

The findings indicate the expansion of the original goals that underpinned the CS's role upon its establishment and thus contributes to the expansion of existing typologies in the research literature on the myriad of functions served by knowledge mediators (Oldham & McLean, 1997). First, the CS aims to achieve diverse goals, some of which are influenced by the neoliberal agenda that promotes perceptions different from those of the era in which the position was created. The study also shows that the scientists appointed to the role have come from different research universities, each characterized by a different organizational culture and set of individualistic goals

shaping their perception of the role and not always acknowledging the nature of the role of CS as a knowledge mediator.

Thus, a structural gap between job definition and implementation is revealed. Our conclusions indicate that the responsibility for this lies not only in the CS himself at the local level, nor in the definitions of the position in Israel, but also in a more complex and universal set of factors that led to the present situation. Our discussion may offer a potentials explanation to help resolve the issue. The conclusions also shed light on how the image of knowledge mediators is shaped, and based on that, steps can be taken internationally for shaping better policy-oriented mediation roles in the future.

Theoretical Framework

Research Utilization

As early as in 1979, Carol Weiss wrote an article that sought to understand the concept of "using research" on the growing interest of both researchers and policymakers to understand how social science research could be used. From the beginning, she understood that the concept is neither clear nor uniform, and that it has many definitions and interpretations. Weiss (1979) argued that if we could gain a better understanding of the concept, what it expresses, and come to an agreement about it, we will be able to find the best way to assimilate it. Nearly four decades after Weiss's article, there is still no accepted definition of the concept although it remains the top aspiration of many researchers, and others pin hopes on it as a solution to bridge the gap between academia and policy. Lately, Van Willigen (2019) suggested that the problem is rooted in the narrow definition of research use in social sciences.

This discussion is not unique to the educational field but is also relevant to other areas of public interest, such as nursing, public health, the environment, anthropology, and social work. The literature deals with many difficulties in the use of research, including the linguistic differences between researchers and their partners in the educational activity, the absence of a common language, and the time required to conduct research against the time constraints of policymakers and practitioners. At its center is the understanding that it is not enough to have good communication between the parties, but rather, to find appropriate responses (Qi & Levin, 2013; Turnhout et al., 2013; Van Willigen, 2019; Weiss, 1979). The relevance of research knowledge for the development of modern societies in the age of the knowledge-based economy has increased the viability of research and researchers who create and disseminate knowledge (Guena & Muscio, 2009).

The importance of "research utilization" for educational policymakers and for the implementers of educational practice is unquestionable, and there is broad agreement among all stakeholders as the situation today is perceived as increasing inequality in education, promoting separation and parallel tracks, and wasting resources. Not only does research literature discuss the issue, but national and international bodies, public and private foundations, as well as public and private bodies that try to bridge the gap between research, policy and practice can be found. Dumont (2019) argued that one of the promising ways to use research is to leverage the voice of consumers, policymakers, and practitioners. Increasing their share of the process from its first steps may yield greater confidence and higher relevance of the evidence.

In the research literature, the subject is discussed under various titles such as use of research or research utilization (Estabrooks, 1999), assimilation of research (Gersten et al., 1997), knowledge translation (Graham et al., 2006), knowledge transfer or transfer of research knowledge (Lavis, Robertson, Woodside, McLeod & Abelson, 2003), knowledge mobilization (Levin, 2011; Qi & Levin, 2013), evidence-based policy and practice or "evidence-informed practice or what works," agenda (Horner et al., 2005; Nutley et al., 2003; Slavin, 2002), and lately, "close-to-practice"

educational research (Wyse et al., 2018) and many others. Previous articles discussed the differences between the various concepts, and many researchers have attempted to conceptualize this issue in different ways.

Owing to its growing importance, in recent years, several deliberate actions have been taken to promote "research utilization," such as developing networks (Rodway, 2015; Zhang Liu et al., 2017), creating clusters (Morris et al., 2016), integrating users in the research process (McDonald & Cater-Steel, 2016), implementing focused distribution, and others. However, neither the researchers nor the policymakers or practitioners have been able to successfully promote the translation, transfer, and application of research in any of the existing methods. To, therefore, find a solution to this problem, the research literature began to discuss methods of using knowledge brokers, and soon this gained popularity in the field.

Knowledge Brokering

Knowledge brokering is one of the methods proposed in the research literature for transfer of knowledge (Ward et al., 2009a) between researchers and policymakers or between researchers and users. Brokers or mediators mediate between researchers and policymakers or practitioners by identifying emerging research questions, transferring knowledge, finding, evaluating, and interpreting evidence, as well as translating knowledge, creating a common language, and thus facilitating interaction (Kramer & Wells, 2005). They create encounters and develop databases (Sverrison, 2001). Ng-A-Fook and others (2015) also suggest knowledge brokering as a tool for policy implementation. Brokers are perceived as not belonging to either party, creator or user, and serve both. Brokers seek to form a relationship with each party individually. In the public sector, this role involves the possibility of promoting social change (Ward et al., 2009b).

The role of knowledge brokers has been variously conceptualized; among many others, they are known as mediators or intermediates (Braun, 1993; Scott et al., 2015), boundary spanners (Ward et al., 2009a), boundary organization, research navigators, research liaison officers, research translators, third culture agents, agents of change, third party agents, party agencies (Levin, 2011), facilitators (Lambert & Glacken, 2005), and so on. Knowledge brokers can be individuals, organizations, or structures, and until recently, they were discussed mainly as activists of the private sector, wherein knowledge dissemination is considered important for advancing innovation. In the last decade, however, the importance of mediators has been understood by those in the public sector as well.

In 1997, Oldham and McLean presented a typology of knowledge brokers, with three main categories that helped to create different frameworks for knowledge mediation: (1) *The Knowledge System Framework*, which is related to the creation, dissemination, and use of knowledge, and sees knowledge mediation as a way of facilitating or managing all these activities. It suggests that for each action there may be a different knowledge mediator. According to Oldham and McLean, this is the broadest framework that involves almost every mediation of knowledge activity, and therefore they proposed two additional frameworks. (2) *Transactional Framework Brokering*, which focuses on the interface between the creator and the user in the knowledge context of a particular project or a decision to be taken. This framework mainly describes the mediation of relevant knowledge for policymakers, private entities, and end users. Oldham and McLean extend this framework by creating a typology of five types of interfaces, the latter of which are relevant to the case in this research, the CS's office: intermediaries and brokers. The similarity between intermediaries and brokers is that they are individuals or organizations that link creators to users. The difference is that intermediaries, mostly, make initial contact with users and locate manufacturers who can meet their needs, while brokers may serve both sides (Scott et al., 2015). Another difference is that brokers benefit from the exchange of knowledge while intermediaries not. (3) *A social change framework* in which mediation aims

to improve the general population's access to knowledge by providing training to users for positive social outcomes. Among other things, Oldham and McLean note the possibility of such mediation in the field of education. This typology has become accepted in the field of research and in the context of knowledge intermediaries in the public sector (Ward et al., 2009a). Another important distinction is between individual brokers and organizational brokers. While individuals serve as an operator or third party for the sake of brokering, organizations functioning as intermediaries are mandated to focus on brokerage as a specific operation (Graham & Tetroe, 2007).

The Israeli Mediation Case

The role of the CS within the MOE was established in Israel in the early 1970s. The then prime minister identified the need for integrating research into policy and convened a professional committee to examine the organization and management of government research, suggest principles for its operation, and outline an overall scientific policy. The committee's conclusions were that universities conduct effective basic research, which may serve as a solid foundation for practical implementation, but it was insufficient to meet the needs of policy change. Therefore, a CS needed to be appointed for each minister, who would assist in concretely applying the research in each field (Katzir, 2000). The CS would operate as an individual knowledge broker whose assignment is adopting the role of broker to ameliorate evidence-based policy (Graham & Tetroe, 2007; Ward et al., 2009b).

The first CS was appointed within the MOE in 1974. The CSs responsibilities involved outlining research policy (science policy) and combining knowledge and science in the service of the state (policy science). As part of the design of research policy, the CS's role also entailed formulation of research topics relevant to the needs of the MOE, initiation of research, creation of research frameworks and procedures, prioritization of research topics in the various fields of education, and determination of criteria for allocation of resources. In addition, the CS was required to promote research collaborations with government bodies and between the various government ministries, research universities, non-governmental research institutes, and relevant international bodies.

In integrating knowledge and science in the civil service, the CS was asked to promote integration and assimilation of knowledge and science in the service of policymakers. This involved providing assisting policymakers in decision-making assistance and designing evidence-based policy. Inter alia, it required making available the relevant research knowledge to policymakers, identifying problems in the field, clarifying that the research would prove to be valuable, and finding ways of handling them and presenting this knowledge before the policymakers. The challenge inherent in the description of the role is the complexity of the activity and the multiplicity of brokering models utilized (Ward et al., 2009b).

This was a unique role in relation to the years in which it was created, as it preceded the process of democratization of knowledge which began later. Additionally, it was a period during which governments did not create knowledge themselves (Steiner-Khamsi et al., 2019). There was an expectation, at the outset, from the CSs as part of the MOE to identify government needs and to locate relevant researchers and research (Katzir, 2000); However, the Minister of Education and senior ministry officials have never been required to utilize the knowledge produced or endorsed by the CS to this day. This pattern echoes Steiner-Khamsi and her colleagues' (2019) assertion regarding academic committees convened during these years, which had quite limited impact on policy decisions. Thus, In the past two decades the role of the SC in producing knowledge has expanded using a new practice in Israel, through the calls for position papers from independent research bodies, independent researchers and universities' and college's researchers. This change reflects the shift towards democratization of knowledge.

To date, 10 scientists have held this position. It should be noted that a few resigned without serving a full term due to differences of opinion with policymakers. There were likewise considerable periods in which no CS served in this office, and at best, a replacement from outside academia or even from outside the education field was appointed.

Methodology

The best method to adopt for this investigation was a qualitative research approach, which would facilitate a thorough understanding of education policy (Gibton, 2016) and follow historical educational research that aims to identify the context and facts to improve policy-setting procedures (Ricker & Wood, 1995).

Study Population

In the absence of a detailed record of the CS, which could have served as source for primary analysis, the corpus studied in this research comprises the full body of media coverage on the CS in the MOE. The legitimacy of using media coverage to empirically analyze public administration and policy issues is anchored in the role of the media in constructing these issues. Media is known as an important, central player in policy studies. On the one hand, as a source of information and on the other, as a mirror of a reality with contrasts and divisions (Saraisky, 2016). The media is not merely a data source, transferring information from one place to another; it is a powerful agent, dictating public agenda and shaping citizens' attitudes and beliefs alongside the government (Cook, 2006).

Mass communication has proven to drive change, among other things, by developing opinions and beliefs among citizens; therefore, it should be seen as a source of stimulating public discussion and education on various subjects. In addition, the media may reflect the struggle for educational policy resulting from political and/or ideological disputes between social agents with differing views and values in various social settings, in the interactions among researchers, policymakers, educational practitioners, and the public. The media frames the issues it reports in a way that makes the public attribute responsibility to interested parties and specific institutions and assign blame to the problems that arise in the field of education on individuals in society (Cook, 2006; Tamir & Davidson, 2011). The focus on individuals in society reinforces the isolation of policymakers from the public, and thus they become more dominant. The media has the power to present certain institutions as more reliable and establish public opinion (Tamir & Davidson, 2011).

The research volume includes 109 articles from all main Israeli daily newspapers (past and present) in which the work of the CS in the MOE is mentioned: *Davar*, *Yedioth Ahronoth*, *Maariv*, *Ha'aretz*, *Calcalist*, and *Globes* between the years 1969 and 2015. In addition, six in-depth semi-structured interviews were conducted with past and present CSs in the MOE to obtain a picture, as complete and comprehensive as possible, about the role and its essence (Glaser & Strauss, 2009). The articles from the press gathered for the research and interviews conducted with the CSs who were still alive comprised the research. The combination and order of data collection, starting with the investigation of newspaper articles and allowing the findings from the document analysis guide the development of the interview, permitted elaboration and verification of the findings from the newspaper articles analysis.

Table 1

Chief Scientists

Years of appointment	Academic affiliation	Expertise	Gender
1993-1995	University Professor	Mathematical Education	F
1997-2001	University Professor	Mathematical Education; Measurement, evaluation and statistics analyses in education	F
2003	University Professor	Measurement, evaluation and assessment analyses in education	M
2005-2008	University Professor	Teacher cognition; Curriculum development	M
2011-2013	University Professor	Biochemistry; metabolic studies in the field of nutritional biochemistry	M
2013-2016	University Professor	Higher-education; education policy; International trends of self-management and school reforms	M

Data Collection

Our first data collection stage was searching for newspaper articles related to the CS office of the MOE. Articles were located using journalistic search engines. We conducted a manual search by using words and combinations (in Hebrew) such as "Chief Scientist of the Ministry of Education," "Chief Scientist," the names of each of the past and present CSs, reforms or changes introduced in the era of each of the scientists, and so on. We found a total of 109 articles dealing with the role of the CS, and therefore these were considered relevant material for analysis.

The second phase of data collection involved in-depth interviews with past and present CSs conducted over a period of six months after analyzing the newspaper articles. These six interviews covered the entire period of the existence of the role. Two former CSs have passed away, and hence, their respective periods were analyzed using only using media coverage. As per Gibton (2016), interviews with senior policymakers are a unique opportunity to expose circumstances, factors, environment, context, and policy. They provide a new perspective on the issue of researchers crossing into a policy position and provide a rare and fascinating glimpse into the formation of policy and how policy decisions are made based on co-operation between the three facets: Academy, industry and policy.

All interviews lasted between 90 and 120 minutes, were recorded, and later transcribed. During the interviews, we tried to follow the dual role (policy versus research) of the CS and examine the CS's opportunity to create an egalitarian partnership between the three facets as was mentioned above.

The interviews provided additional information, which could not be retrieved from the analysis of newspaper articles alone, about the brokering goals and the process from the perspectives of the people who were leading the office and held the position under investigation. An interview guide was developed by the authors in light of the newspaper articles' analysis influenced by the framework proposed by Oldham and McLean (1997).

We asked questions such as "What were your responsibilities as a Chief Scientist?" "Who did you work for? Who did you report to?" "How did you maneuver between your role as a university

researcher and your role as a Chief Scientist?" All questions were aimed at understanding the job perceptions of the interviewees and examining how the role in the MOE was shaped.

Data Analysis

For this research, we used a combination of thematic analysis (Braun & Clarke, 2006) and qualitative content analysis (Schreier, 2013). This combination endorsed both open coding and theoretical coding as per Pizmony-Levy (2018). The qualitative content analysis included text analysis of the newspaper articles to reveal "the illumination of patterns and trends that are not immediately observable" (Saraisky, 2016, p. 27). Also, data organization and activities such as description, classification, and interpretation were applied to the raw material. External theoretical categories (Etic) were then used to increase the reliability of the research (Pike, 1967) for the thematic analysis (Braun & Clarke, 2006). Thus, the theoretical model used Oldham and McLean (1997)'s typology to better explain the main themes that arose from the analysis stage.

Data analysis in this research was twofold, as Gibton (2016) suggests. First, articles were analyzed to gain a better understanding of the role of the CS in the MOE. Then, thematic and inductive analyses were conducted to identify categories and terms (Glaser & Strauss, 2009). The first step involved data familiarization. The second step was to revise the coding frame based on data familiarization; the third step was extracting data and assigning the relevant pre-defined (Etic) code or assigning new codes (Emic) when necessary. Each of these steps were conducted separately, each author on his own. The next two steps were conducted together. In the fourth step we reviewed the themes, re-coded the data, defined and refined the themes to obtain a single shared coding system.

In the second stage, the interviews were analyzed separately to expose the limits of the policy discourse. Initially, we did not apply our initial coding system; the analysis unit was an episode or vignette from the text (Gibton, 2016). We applied the constant comparison central analysis strategy to identify strong categories (Babbie, 2004). Data were collected and simultaneously and systematically analyzed for interactions between collection and analysis, which enabled a continuous interpretation of the main topics and categories (Guest et al., 2013) until four main themes were identified.

Next, we compared the two coding systems, the newspaper articles and the interviews, and merged them to form one coding system, which is presented as a finding in this paper. Since there was correlation between the interview briefings and the newspaper coding system, all the codes obtained were largely similar. However, in light of the fact that the theoretical framework also influenced the interview briefing design, we were able to find new codes that were not derived from the journal articles.

Data collection was conducted to maintain integrity (Josselson & Lieblich, 2003). Therefore, the results of the study include abstraction into the theoretical and conceptual framework presented above in a way that expands knowledge in the research field. In addition, constant comparison helped in understanding the phenomena and enabled theoretical expansion, which requires examining basic assumptions, biases, and perspectives of researchers and respondents (Babbie, 2004).

Research Limitations

This research used computerized archives of daily newspapers in Israel. It is important to note that some newspaper archives have not yet undergone full digitization, therefore there are years missing. Those years can be found in microfilm or manually searchable newspaper sheets, but since more than 100 articles were found and all the years were covered in at least two of the newspapers selected, no manual searches were conducted. However, in the days, months, or years in which we saw numerous newspaper articles, we chose to conduct a targeted manual search in newspapers that

did not digitize at these times to ensure full coverage of the event or issue. This search yielded another nine articles and increased the research population to 109 articles.

Ethics

In qualitative research, the researcher is required to be reliable, and therefore during both data collection and analysis, the researchers subjected themselves to self-criticism and mutual reflective examination (Thornberg & Charmaz, 2014). The analysis represents our understanding of reality that emerged from the articles and the interviews, but within a specific and limited theoretical context, as suggested in the literature review. We also obtained informed consent from all participants, maintained complete anonymity of all personal details of interviewees, and used interviewee statements for research purposes only (Babbie, 2004).

Findings and Discussion

Four main themes that point to the complexities of the role of the CS as a policy-oriented knowledge mediator are presented in this section. These themes also reflect some of the barriers and the factors that led to what would be contributions to the unsuccessful Israeli experience in attempting to bridge the academia-field-policy gap by creating the CS position as a policy-oriented knowledge brokering system. It is important to note that while the findings are locally driven, they also have two layers of international connections: they are the result of global policy trends such as the Neo-Liberal trend (Carney, 2009), and internationally standardized institutions such as the higher education institutions (Altbach et al., 2019), in which the scientists who occupied the position of CS socialized culturally.

The Chief Scientist: A De-Facto Chaotic Role

The attributed responsibilities of the CS as represented in the finding materials go beyond the definition of the position according to the law and diverge from the initial objective stated in it. According to Oldham and McLean's (1997) typology, when there is no specific definition, the role "falls" under the first definition, the knowledge system framework**,** into which is categorized all mediation knowledge. This is sometimes indicative of a lack of targeting resulting in a vague result. Apparently, there is no harm in multiple roles unless they prevent the formal role goals from being achieved.

This points largely to the diverse expectations of the public, academia, and policymakers of the CS's activities and the problematics in the design of the role. De facto, the CS's tasks include *ordering studies from research bodies*, as a few articles show: "The Ministry of Education's Chief Scientist, Prof. Shlomo Kuglamas, said that the ministry has commissioned and funded several studies on quality of life" (*Davar*, 1990). This is supposed to be the main activity to provide solutions to meet the needs of the field and policymakers so that the CS acts as a mediator, thereby *helping shape education policy* and ameliorate the field through evidenced-based processes. Such expectations have however not materialized in practice, as one CS explained:

> Government research is intended to serve the goals of the ministry in which you operate, in this case in the field of education. The scientist is supposed to know the subject of the research, the characteristics of the research, the research tools, and is also expected to learn about the complexity of the world in which he deals, the world of education in this case, and connect the two. There may be a minister or a MoE CEO who says, 'You know what, I have a question that concerns me,' but the whole policy of research is on the Chief Scientist's desk.

As can be understood from his choice of words, and from the decision to raise the point that policymakers view the CS as an option rather than a necessity, the scientist remains primarily an academic researcher in the eyes of policymakers. Another CS added, "[The scientist should] see what the issues are at the center of the education system and make sure that researchers at the academy research deal with and express opinions about them." He later added that the gap between the need and reality is large.

Among the articles that were analyzed, there was also reference to the expectation of *improving Israel students' achievements* as per Whitty (2006), who describes policymakers' expectations from researchers. This relies on the understanding that policy and practice based on research and partnership between the three facets may indirectly lead to benefit the field of education and educational achievements (Bryk, 2015; Coburn & Penuel, 2016). What is surprising is that, in 2003, several newspaper articles indicated the appointment of a well-known assessment researcher as the CS as an effort of the MOE to enhance student achievement. *Globes* (2003) reported:

> The Ministry has instructed its Chief Scientist to set up a committee to examine the quality of math and English tests as these subjects prove to be the Achilles' heel of most students. The committee is expected to map the exams, in the Ministry's language, according to validity and reliability criteria.

Another role found in the material collected is that of the CS as a *consultant to the Minister of Education*. As noted by another CS:

> I told the Minister of Education, "Tell me what you think will be on the agenda in six months and in a year?" I asked [researchers] to write position papers on subjects they had not thought about, that is, on these topics: what is done around the world, what the alternatives are, and what is suitable for Israel…. I always asked them to provide at least two recommendations, with the virtues and drawbacks of the different options.

Many other roles were mentioned only a few times, although expectations such as *conducting research, strategic planning, assessment, and evaluation* were included in the overall expectations from the CS. A possible explanation to this finding relates to the absence of an orderly job description for the CS other than that stated in the law. This aligns with the challenges that appear in the international literature regarding the role. Usually, the brokering role represents the multiplicity of brokering models utilized and tends to combine aspects of various brokering models within a single intervention (Ward et al., 2009b).

In their interviews, the CSs acknowledged that each saw the role differently and took steps that matched their individual perception, in a manner more similar to the autonomous space given to a researcher at the university than to a policymaker. The absence of a job definition can also be attributed to the lack of clarity on the action that should be taken to narrow the gap between academia and policy, and apparently, there was an attempt to settle for its very existence.

The Chief Scientist: Double Role

The scholarship on knowledge mediators describes them as living in between, as characters who do not belong to either side, knowledge creators or knowledge consumers at the policy or field level. In the words of former CSs most of them view their role as that of a knowledge broker in the same way:

> I believe that one of the roles of the Chief Scientist in the Ministry of Education is to mediate between the "one side," the researcher, and the "other side" – the client. I see the Chief Scientist as a mechanism for linking the researcher with the client

> throughout the research phase: they must translate the client-client's desires and needs into the language and methods used by the researcher. Track research performance considering the objectives set. With constant attention to the use the client will make of the findings obtained. Finally, he must help translate the researcher's findings and conclusions into the language and conditions of the educational field. (Kuglamas, 1988)

The Israeli model is interesting in this regard, because the CSs at the MOE have all been and are world-renowned researchers in their respective fields (i.e., creators of knowledge). This not only places the CSs on the side of the creators but also contradicts the scholarship, which emphasizes the need for the knowledge broker to be independent and not belonging to either side. It is apparent that the primary belonging of the leading scientists to the research world is detrimental to their functioning. So, the CSs hold two main identities: that of a knowledge producer through their experience as a researcher and that of a policymaker employed by the MOE. These two identities may lead to the blurring of the role, resulting in differing expectations from different entities. As can be seen from the words of a former CS: "I resigned from the Ministry of Education in the background of the 'Meitzav' wherein I did not agree with the Minister's and the Ministry's policy, and realized that the Ministry did not really need a Chief Scientist." In his remarks, the CS went on to explain that research on assessment proves that it should be used to improve a school by using results, not as a tool for measuring schools by policymakers. The clash between the scientist's research conceptions and the role as policymaker eventually led to his resignation.

This finding raises questions regarding the ethics of the appointments and the ability of the appointees to facilitate the development of evidence-based education policy and research brokering systems. On the one hand, the CS is an integral part of leadership *and* policymaking, while on the other hand, the CS is also responsible for implementing, supervising, and assessing policy. In the Israeli case, as presented here, the CS is also a key figure at the university to which it belongs and usually is a tenure track that it will return to; this positioning cements the CS's position as knowledge creator. Thus, in contrast to common descriptions of knowledge brokers in the international scholarship (Pfleger et al., 2018; Ward et al., 2009), the CS in Israel does not seem to fully embody and symbolize the role of the knowledge manufacturing side while, on the other hand, it neither does exclusively represent knowledge consumers at the policy level. As such, the CS is not creating a third role of mediation. If so, beyond the chaotic role presented in the previous theme, it is as if it has multiple goals emanating from this dual role.

The Impact of the Neo-liberal Ideology on the Role

The goals identified in the previous sections are insufficient for comprehensively analyzing and understanding the role of the CS as a mediator. When the goals of the CS's role were written in the 1960s, the social-economic agenda underlying education policy in Israel was a social-democratic one (Bialik, 2014). This perception would have influenced the perception of the mediation of knowledge reflected in the goals as presented. However, since the late 1970s in Israel and other Western countries, the neoliberal agenda has become the central force guiding educational policy (Bialik & Shefi, 2017; Carney, 2009). This worldview, which placed individual freedom at its center and reduced the role and responsibility of the state in the exercise of this freedom, was also expressed in the shaping of the goals of the CS as a knowledge broker in the decades in which they operated. Various studies also indicate that knowledge mediation is a role that reflects a postmodern profession (Kakihara & Sorensen, 2002).

Accelerated engagement with measurable standards, national and international comparison tests, and accountability ideas that characterize the Global Education Reform Movement (GERM)

(Adamson et al., 2016; Sahlberg, 2016) have had a significant impact on the role of the CS as a knowledge broker. Instead of examining in-depth research findings to assist in the design of a research-based policy and subsequently initiate assessment and evaluation mechanisms that examine the implementation of the policy, it appears that the research policy as well as the assessment and measurement of the research policy were significantly influenced by GERM, as can be seen, for example, in the article published in *Globes* in 2002:

> Another example of contempt and/or amateurism in the Education Ministry. Even when the last report of the International Mathematics and Science Test was released in 1999, according to which Israel dropped to 28th place on the scale of achievement from 38 countries, it was not presented with the conclusions and recommendations of the report. Mind You. The best experts in the world participated in the study, and although the report was much more than a "popular scale", senior ministry officials refrained from acting on it, under various pretexts.

In the year following the publication of the article, similar things were repeated in this and other newspapers, which point to the perception of standards-based research in the spirit of the era in which the CSs dealt at the expense of their statutory duties: "They throw a mountain of money on exams, 17 million NIS, and there is no budget for strengthening weak schools, so what is the benefit of locating them?" (*Globes*, 2003).

The effect of the neoliberal agenda seems to have shaped its own purposes for the type of knowledge mediation required of the CSs. It should be noted that this finding about the focus of knowledge mediation on the findings of international standards-oriented research is even more interesting in the context that most of the leading scientists in this period are senior academics. It is precisely the perception of academic freedom that goes against the shaping of research on political, economic, institutional, or personal agendas, along with the great criticism voiced by many circles against the neo-liberal educational policy, which is less evident in the role of the CS as a mediator.

As part of the CS as knowledge broker in the era of neo-liberal agendas, one can also identify another influence in the spirit of globalization processes. In this context, the material that emerged from the findings proved that it is not enough to mediate local knowledge alone, but that the CS's role is to mediate knowledge that is perceived as valuable in the global context (Steiner-Khamsi, 2004). An example of such international and global influence can be heard in the voice of one of the CSs regarding the "Meitzav" tests and their implications for his role:

> Then the "Meitzav" tests began, and the "Meitzav" tests were ... they [the Ministry of Education] when they were talking about the tests, they would say, 'We'll beat them!' It's like using tests to whip schools, and then they'll impose their way. I did not understand the role of the "Meitzav" tests, even ... even the name of the "efficiency and growth [school] indices." It started with internal politics; a lady was responsible for this. Although I expected it to be so, her role was not subordinate to that of the chief scientist; she was more powerful than me and independent. Their desire to "whip" them, that is, to use the "Meitzav" tests as a whip on the schools, would not work by replacing the manager; maybe they'll not fire him at all, but they'll call the teachers to order; this is a concept they learnt from the Americans, the "no child will be left behind" reform. That's exactly the idea, and in the United States, it was widely criticized by members of established educational researchers in academia, but it had the support of politicians, administrators, and bureaucrats of all kinds, who said that this is the only way things can change. And then there was the word "accountability," and there was "reporting" in the middle ... They said that this could be the main tool of the education system. And I thought the "Meitzav" could be useful if it was

> undertaken in such a way that the school would use its results to improve the school, not as a "whip to whip through."

This quote also points to the political-economic pressures on the CS. First, the appointments are mostly based on previous political connections between the researcher and government officials (Dovrat Committee, 2005), which creates uncertainty and adds to the difficulty of policy, due to the frequent changes of Israeli governments. One of the interviewees explained the procedure of his appointment:

> The CEO told me in October that I would become the Chief Scientist. I told her that the school year at the university would start in October; I have a curriculum, and I am committed to the university. So, she said, 'And when can you come?' I said, 'Next year; next September.' And she said, 'Okay.' There was then a Chief Scientist that [had resigned]. That was my first clue: she had agreed too readily. Then, when I took the position on, I understood the reason: the bottom line is that the Ministry of Education does not need a Chief Scientist. The seniors think that it is possible to manage without one.

Thus, apparently, dependence on political figures to appoint a CSs also affects the agenda that the scientists will seek to promote in the framework of their position. The great turnover of the CSs, almost none of whom completed a full term, and the long periods in which there was no CS at all, attest to the fact that the position is politically dependent (Turnhout et al., 2013).

Furthermore, these appointments often serve as a response to the populist public discourse or to meet political needs and are not entirely based on professional decisions (Scott et al., 2015). Two options are available to the CS: either play the game and act in the spirit of the system or resign. In the Israeli case, most CSs resigned and did not serve for a full term, usually due to differences of opinion with senior Ministry officials, including the Minister himself and the Office Director General.

A New Goal for Knowledge Brokers: Personal Goals and Political Pressures

The neoliberal era that influenced the role of the CS as broker knowledge also affects the place of the individual in society as well as the perception of the scientists' individual role among their peers. In addition, the CSs are also subject to pressures in relation to the position they held prior to the role of the scientist, and to which they will go back after their term as CS (Bottery, 2000; Carney, 2009). In addition to the typology of Oldham and McLean (1997), alongside the characteristics of knowledge mediation derived from multiple expectations of interested parties in mediation and the characteristics of knowledge mediation influenced by the neoliberal agenda, one can largely add a fourth category to knowledge brokering that relates to personal goals and characteristics.

This finding is corroborated by an article dealing with the appointment of Professor David Nevo to the position of CS at the MOE, and published in *Globes* in 2003:

> Nevo is connected to the umbilical cord for internal evaluation and measurement, which is operated inside schools by teachers and principals. Schools that want to be precise in diagnosis are usually assisted by an academic evaluator. And here is something that the reports of education and the commentators missed. Nevo, a member of Tel Aviv University, is an expert on measurement and evaluation in education, who offers private services to the educational system, at least until he became chief scientist. If the Ministry of Education does not accompany the "Meitzav" with internal school measurement, it means cutting off the branch that

> Nevo is sitting on. After all, he was not born in the Ministry of Education, and he served as a chief scientist there only half-time. He apparently has no intention of giving up his position and a source of additional income in the future after leaving the Ministry of Education. Nevo's private works are his right and his private interest, and we are sure that he brings great benefit to the schools that use his services. We also know that he truly believes that there should be an integrated assessment. Nevertheless, it is impossible to ignore the conflict of interests that exists or is likely to exist between those who come from the free market and for a limited period of time in the civil service. This is the same problem as the appointment of a government attorney who is a lawyer, in a private office. There is a conflict of interest or there may be a conflict of interest.

This finding, which could even provide a possible explanation for the only partial success in achieving the primary goals of the CS, as they are now stated, is expressed in the words of another CS:

> I was doing something close to my heart. Although not directly related to the position of Chief Scientist, it was related to my area of expertise [in research]. I saw it as part of the advice I had to give to the office and thought it was inappropriate to keep quiet about my area of expertise.

It can be concluded that the diversity of the academic background of each CS has also influenced the navigation of the role away from its early goals. This indicates that the connection between the creators and the users is not always a result of the needs of the users, nor of the knowledge that the producers have, but of the knowledge broker's worldview. Another scientist added:

> Different scientists work differently. One does not simply step into the shoes of the predecessor and continue it way. Each of them contributes according to personal understanding, according to personal experience, according to personal perception of reality and knowledge in research. There is not necessarily a standard in this matter.

These statements, as well as others, raise questions about the potential inherent in the role of the CS as a knowledge broker in a research-based education policy based on accumulated knowledge. It is clear that the CSs are not 100% loyal to their new and temporary role, but remain with one leg outside, in their role in the academic institution they belong to, and in their field of research. Staying out has a significant impact on decision-making in their office. Additional testimony was given in an article published in 1978 in *Davar*:

> Does not the present pattern of the activity of the chief scientists also contribute to this problematic [The inability to know in education what are the achievements of the reform because there is no ongoing information]? Can a scientist who is a foreigner who is uprooted from one of the universities and comes to a government office on an hourly examination integrate into the administrative system whose task it is to formulate policy not only for the short term but also for the long term?

In *Davar* in 1978, a senior researcher from a well-known university also pointed to the problem with the appointment of the CS. "It is very important that the CCS be independent and resist pressures." He added, "There is concern that this man's institutionalization [in universities] over time is more harmful than useful."

If so, the CS seems to play a dual role. On the one hand, it is an integral part of the leadership regarding the policy factor, while in other cases it also implements, supervises, and

criticizes it. However, it is also a key figure at the university to which he belongs, and it can be said that as a researcher at the university, it is pressed to self-promotion in own field, according to the criteria set for researchers at research universities (Zeichner, 2010). This double duty leads, inter alia, to policy decisions based on narrow data and private interests.

Conclusions and Practical Implications

Taken together, our findings reveal a structured gap between the nature of the CS's role as a mediator of research knowledge and educational policy, for which we offer three possible theoretical explanations. These explanations shift the importance of the findings from the local Israeli level to the international policy level, while highlighting possible policy directives aimed at better constructing the role of policy-oriented knowledge brokers.

The first explanation concerns what Surridge and Harris (2007) call "lack of support and basic training" for those who play the role of knowledge brokers. As can be seen from the findings and other studies in the field, knowledge brokers need communication skills and high skills to succeed in the task (Ward et al., 2009b). On the face of it emerges from the characterization of the written role in the law that the legislator assumes that every senior academic has the ability to act as a knowledge mediator without relevant training and support. However, as emerges from the study, the conflicting pressures, the multiplicity of wishful thinking, and even the effects of social worldviews and personal needs affect the characteristics of knowledge mediation and its goals.

This explanation of the finding is interwoven with a second explanation offered by Turnhout et al. (2013), who argue that the skills and knowledge that knowledge brokers need are those that help the knowledge broker maintain their independence against the many pressures of the stakeholders in the process. The mediator is required to have unique communication abilities and the self-perception of a balancing factor within a system of structured contradictions and tensions. A question that arises in the context of this explanation is related specifically to the image of the senior academics who are placed in the position after years of working in very formalistic frameworks with highly structured ceremonial rules of action and a relatively low need to deal with contradictions and social coalitions and their ability to acquire these skills at this stage of their professional lives. This conclusion is consistent with the science and scientist's typology proposed by Pielke (2007), when he argued that a scientist is usually at the near end of the "production" of the scale that describes the production and use of research. Thus, in the position of CS, as it stands today, there is an expectation for change of identity.

Baek and colleagues (2018) show that most of the research used by policymakers could be referred to as "gray literature", such as research reports, trade books and others. Steiner-Khamsi and colleagues (2019) continue the same line and point to the variation in references within the policy recommendations of the pre-reform committees convened and the references within the policy itself. The similarity lies only in relying on international bodies, such as the OECD. It seems that the research that policy is based on is more inclined towards international research bodies in the global age.

A final explanation for the common denominator of the study's findings relates to Levinson, Sutton and Winstead's (2009) "policy as practice" framework, which refers to the fact that all those engaged in the field of education have the cultural will to shape policy. This explanation may lead to the conclusion that the various knowledge-mediation characteristics we found in the study and in the gap from the narrower characteristics that appear in the law or in the theoretical perceptions of knowledge mediation are not the result of lack of training, skills, or social ability as suggested above. It is possible that the expansion of the characteristics of knowledge mediation, and entry into personal spaces influenced by socio-economic agendas, is also due to the fact that the CSs hold two

conflicting wishes in their role – to mediate research knowledge of educational policy and to formulate policy – at the same time.

All three possible theoretical explanations for the gaps we found between the nature of the CS's role as a mediator of research knowledge and the educational policy, also highlight possible policy directives aimed at better constructing a more effective policy-oriented knowledge brokering role. Concurrently, they provide us possible answers to the research lacuna of how conditions for research utilization can be better created.

We conclude with two possible future research directions - similarly aimed at enhancing our understanding regarding this research lacuna. The first research direction is derived from our findings regarding the expansion that the Israeli CS role de-facto poses for Oldham and McLean's (1997) knowledge brokering typology. Their first definition, the knowledge system framework**,** we suggest all unspecific mediation role categories should be better specified and elaborated in order to better conceptualize brokering roles. In an age of GERM and new educational governance blurring the lines between private and public brokering and mediation interests and actions it is even more essential. Furthermore, our findings suggest that future research should aim to better understand how specific GERM characteristics and personal research agendas are shaping mediation roles and actions. Such answers can help us construct a more nuanced typology as an analytical framework for the knowledge brokering phenomenon, while at the same time helping to better construct this important role.

References

Adamson, F., Åstrand, B., & Darling-Hammond, L. (Eds.). (2016). *Global education reform: How privatization and public investment influence education outcomes*. Routledge. https://doi.org/10.4324/9781315680361

Bialik, G. (2014). Public–Private Hybridity in School Governance: A Solid Foundation or Developmental Process? Lessons from a Historical Analysis of Charter-Type Schools in Israel. e*Journal of Education Policy, Northern Arizona State University Press*. 2014 Fall Issue.

Bialik, G., Shefi N. (2017). When the GERM Hosts the Antidote: The Surprising New Birth of Israel's Anti-GERM Pre-K Policy. *Global Education Review*. 4 (2), 40-57.

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2019). *Trends in global higher education: Tracking an academic revolution*. BRILL.

Babbie, E. R. (2004). *The practice of social research*. Thomson/Wadsworth.

Baek, C., Hörmann, B., Karseth, B., Pizmony-Levy, O., Sivesind, K., & Steiner-Khamsi, G. (2018). Policy learning in Norwegian school reform: A social network analysis of the 2020 incremental reform. *Nordic Journal of Studies in Educational Policy, 4*(1), 24-37. https://doi.org/10.1080/20020317.2017.1412747

Barnett, R. (2003). Foreword. In: N. Jackson (Ed.), *Engaging and changing higher education through brokerage* (pp. xvi-xviii). Ashgate.

Bottery, M. (2000). *Education, policy and ethics*. Continuum.

Braun, D. (1993). Who governs intermediary agencies? Principal-agent relations in research policy-making. *Journal of Public Policy, 13*(2), 135-162. https://doi.org/10.1017/S0143814X00000994

Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper (Ed.), *The handbook of research methods in psychology* (pp. 57-71). American Psychological Association. https://doi.org/10.1037/13620-004

Bryk, A. S. (2015). Distinguished lecture accelerating how we learn to improve. *Educational Researcher, 44*(9), 467-477. https://doi.org/10.3102/0013189X15621543

Carney, S. (2009). Negotiating policy in an age of globalization: Exploring educational "policyscapes" in Denmark, Nepal, and China. *Comparative Education Review, 53*(1), 63-88. https://doi.org/10.1086/593152

Coburn, C. E., & Penuel, W. R. (2016). Research–practice partnerships in education: Outcomes, dynamics, and open questions. *Educational Researcher*, *45*(1), 48-54. https://doi.org/10.3102/0013189X16631750

Condliffe, L. A. (2000). *An elusive science: The troubling history of education research*. University of Chicago Press.

Cook, T. (2006). The news media as a political institution: Looking backward and looking forward. *Political Communication*, *23*(2), 159-171. https://doi.org/10.1080/10584600600629711

Dovrat Committee. *National Task Force for the Advancement of Education in Israel* (2005). The Ministry of Education. [Hebrew]

Dumont, K. (2019). *Reframing evidence-based policy to align with the evidence*. William T. Grant Foundation.

Estabrooks, C. A. (1999). The conceptual structure of research utilization. *Research in Nursing & Health, 22*(3), 203-216. https://doi.org/10.1002/(SICI)1098-240X(199906)22:3%3C203::AID-NUR3%3E3.0.CO;2-9

Fullan, M. (2014). *Leading in a culture of change personal action guide and workbook*. John Wiley & Sons.

Gersten, R., Vaughn, S., Deshler, D., & Schiller, E. (1997). What we know about using research findings: Implications for improving special education practice. *Journal of Learning Disabilities, 30*(5), 466-476. https://doi.org/10.1177/002221949703000501

Gibton, D. (2016). *Researching education policy and public policy: Qualitative methods and ethical issues*. Routledge. https://doi.org/10.4324/9781315775722

Geuna, A., & Muscio, A. (2009). The governance of university knowledge transfer: A critical review of the literature. *Minerva*, *47*(1), 93-114. https://doi.org/10.1007/s11024-009-9118-2

Glaser, B. G., & Strauss, A. L. (2009). *The discovery of grounded theory: Strategies for qualitative research*. Transaction Publishers.

Godin, B. (2001). *Defining R&D: Is research always systematic?* Project on the History and Sociology of S&T Statistics 7. Canadian Science and Innovation Indicators Consortium.

Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: Time for a map? *Journal of Continuing Education in the Health Professions, 26*(1), 13-24.

Graham, I. D., & Tetroe, J. (2007). Some theoretical underpinnings of knowledge translation. *Academic Emergency Medicine*, *14*(11), 936-941. https://doi.org/10.1002/chp.47

Guest, G., Namey, E. E., & Mitchell, M. L. (2013). *Collecting qualitative data: A field manual for applied research*. Sage Publications. https://doi.org/10.4135/9781506374680

Hargreaves, A. (2000). Four ages of professionalism and professional learning. *Teachers and Teaching: Theory and Practice*, *6*(2), 151-182. https://doi.org/10.1080/713698714

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children*, *71*(2), 165-179. https://doi.org/10.1177/001440290507100203

Howey, K., & Zimpher, N. (2006). *Boundary spanners*. American Association of State Colleges and Universities.

Josselson, R., & Lieblich, A. (2003). A framework for narrative research proposals in psychology. In: R. Josselson, A. Lieblich & D. P. McAdams, (Eds.), *Up close and personal: The teaching and learning of narrative research* (pp. 259-274). https://doi.org/10.1037/10486-014

Kakihara, M., & Sørensen, C. (2002). "Post-modern" professionals' work and mobile technology. *Paper presented at the 25th Information Systems Research Seminar*. Copenhagen Business School.

Katzir, A. (2000). *How were the Chief Scientists born in government offices?* Remarks made during a seminar titled Chief Scientist in Israeli Government Ministries. Jerusalem, Israel: The Israel Academy of Sciences and Humanities. [Hebrew].

Kramer, D. M., & Wells, R. P. (2005). Achieving buy-in: Building networks to facilitate knowledge transfer. *Science Communication, 26*(4), 428-444. https://doi.org/10.1177/1075547005275427

Kuglamas, S. (1988). In the middle: Answer to Abraham Ron. *Megamot, 2*(1988), 236-238. [Hebrew].

Lagemann, E. C. (2000). *An elusive science: The troubling history of education research*. University of Chicago Press.

Lambert, V., & Glacken, M. (2005). Clinical education facilitators: A literature review. *Journal of Clinical Nursing, 14*(6), 664-673. https://doi.org/10.1111/j.1365-2702.2005.01136.x

Lavis, J. N., Robertson, D., Woodside, J. M., McLeod, C. B., & Abelson, J. (2003). How can research organizations more effectively transfer research knowledge to decision makers? *The Milbank Quarterly, 81*(2), 221-248. https://doi.org/10.1111/1468-0009.t01-1-00052

Levin, J. S. (2005). The business culture of the community college: Students as consumers; students as commodities. *New Directions for Higher Education*, *129*(2005), 11-26. https://doi.org/10.1002/he.169

Levin, B. (2011). Mobilising research knowledge in education. *London Review of Education, 9*(1), 15-26. https://doi.org/10.1080/14748460.2011.550431

Levinson, B. A., Sutton, M., & Winstead, T. (2009). Education policy as a practice of power: Theoretical tools, ethnographic methods, democratic options. *Educational Policy*, *23*(6), 767-795. https://doi.org/10.1177/0895904808320676

McDonald J., & Cater-Steel, A. (2016). *Communities of Practice: Facilitating Social Learning in Higher Education*. Springer. https://doi.org/10.1007/978-981-10-2879-3

Morris, D., Armit, L., & Grealish, L. (2016). Collaborative clusters education model-an evolution of the dedicated education unit. *Australian Nursing and Midwifery Journal*, *24*(3), 43.

Ng-A-Fook, N., Kane, R., Butler, J., Glithero, L., & Forte, R. (2015). Brokering knowledge mobilization networks: Policy reforms, partnerships, and teacher education. *Education Policy Analysis Archives, 23*(122). https://doi.org/10.14507/epaa.v23.2090

Nutley, S., Walter, I., & Davies, H. T. (2003). From knowing to doing: A framework for understanding the evidence-into-practice agenda. *Evaluation, 9*(2), 125-148. https://doi.org/10.1177/1356389003009002002

Oldham, G., & McLean, R. (1997) *Approaches to knowledge-brokering*. Maritoba, Canada: International Institute for Sustainable Development. Accessed December 1, 2018, from: www.iisd.org/pdf/2001/networks_knowledge_brokering.pdf#search=%22Approached%20to%20knowledge%20brokering%20oldham%22

Pfleger, R. H., Wilson, T. S., Welner, K. G., & Bibilos, C. (2018). Measuring opportunity: Redirecting education policy through research. *Education Policy Analysis Archives, 26*(73). https://doi.org/10.14507/epaa.26.3525

Pielke, R. A. (2007). *The honest broker: Making sense of science in policy and politics*. Cambridge, UK: Cambridge University Press. https://doi.org/10.1017/CBO9780511818110

Pike, K. L. (1967). *Language in relation to a unified theory of the structure of human behavior*. Berlin, Germany: Walter de Gruyter GmbH & Co KG. https://doi.org/10.1515/9783111657158

Pizmony-Levy, O. (2018). Compare globally, interpret locally: International assessments and news media in Israel. *Globalisation, Societies and Education, 16*(5), 577-595. https://doi.org/10.1080/14767724.2018.1531236

Qi, J., & Levin, B. (2013). Assessing organizational efforts to mobilize research knowledge in education. *Education Policy Analysis Archives, 21*(2). https://doi.org/10.14507/epaa.v21n2.2013

Ricker, E. W., & Wood, A. B. (1995). *Historical perspectives on educational policy in Canada: Issues, debates and case studies*. Canadian Scholars' Press.

Rodway, J. (2015). Connecting the dots: Understanding the flow of research knowledge within a research brokering network. *Education Policy Analysis Archives, 23*(123). https://doi.org/10.14507/epaa.v23.2180

Sahlberg, P. (2016). The global educational reform movement and its impact on schooling. In: K. Mundy, A. Green, B. Lingard, & A. Verger, (Eds.), *The Handbook of global education policy*. (pp. 128-144). John Wiley & Sons. https://doi.org/10.1002/9781118468005.ch7

Saraisky, N. G. (2016). Analyzing public discourse: Using media content analysis to understand the policy process. *Current Issues in Comparative Education, 18*(1), 26-41.

Schreier, M. (2013). Qualitative content analysis. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis* (pp. 170–183). Sage. https://doi.org/10.4135/9781446282243.n12

Scott, J., Jabbar, H., LaLonde, P., DeBray, E., & Lubienski, C. (2015). Evidence use and advocacy coalitions: Intermediary organizations and philanthropies in Denver, Colorado. *Education Policy Analysis Archives, 23*(124). https://doi.org/10.14507/epaa.v23.2079

Slavin, R. E., (2002). Evidence-based education policies: Transforming educational practice and research. *Educational Researcher, 31*(7), 15-21. https://doi.org/10.3102/0013189X031007015

Steiner-Khamsi, G. (2004). *The global politics of educational borrowing and lending*. Teachers College Press.

Steiner-Khamsi, G., Karseth, B., & Baek, C. (2020). From science to politics: Commissioned reports and their political translation into White Papers. *Journal of Education Policy, 35*(1), 119-144. https://doi.org/10.1080/02680939.2019.1656289

Surridge, B., & Harris, B. (2007). Science-driven integrated river basin management: A mirage? *Interdisciplinary Science Reviews, 32*(3), 298-312. https://doi.org/10.1179/030801807X211711

Sverrisson, Á. (2001). Translation networks, knowledge brokers and novelty construction: Pragmatic environmentalism in Sweden. *Acta Sociologica, 44*(4), 313-327. https://doi.org/10.1080/00016990152696402

Tamir, E., & Davidson, R. (2011). Staying above the fray: Framing and conflict in the coverage of Education policy debates. *American Journal of Education*, *117*(2), 233-265. https://doi.org/10.1086/657889

Thornberg, R., & Charmaz, K. (2014). Grounded theory and theoretical coding. In Flick, U. (Ed.). *The Sage Handbook of Qualitative Data Analysis* (pp. 153–169). Sage Publications.

Turnhout, E., Stuiver, M., Klostermann, J., Harms, B., & Leeuwis, C. (2013). New roles of science in society: Different repertoires of knowledge brokering. *Science and Public Policy, 40*(3), 354-365. https://doi.org/10.1093/scipol/scs114

Van Willigen, J. (2019). *Making our research useful: Case studies in the utilization of anthropological knowledge*. Routledge. https://doi.org/10.4324/9780429047930

Ward, V., House, A. O., & Hamer, S. (2009a). Knowledge brokering: The missing link in the evidence to action chain? *Evidence & Policy: A Journal of Research, Debate and Practice, 5*(3), 267-279. https://doi.org/10.1332/174426409X463811

Ward, V. L., House, A. O., & Hamer, S. (2009b). Knowledge brokering: Exploring the process of transferring knowledge into action. *BMC Health Services Research, 9*(1), 12. https://doi.org/10.1186/1472-6963-9-12

Weiss, C. H. (1979). The many meanings of research utilization. *Public Administration Review, 39*(1979), 426–431. https://doi.org/10.2307/3109916

Whitty, G. (2006). Education(al) research and education policy making: Is conflict inevitable? *British Educational Research Journal, 32*(2), 159-176. https://doi.org/10.1080/01411920600568919

Wyse, D., Brown, C., Oliver, S., & Poblete, X. (2018). *The BERA close-to-practice research project: Research report*. British Educational Research Association.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college-and university-based teacher education. *Journal of Teacher Education*, *61*(1-2), 89-99. https://doi.org/10.1177/0022487109347671

Zhang, S., Liu, Q., Chen, W., Wang, Q., & Huang, Z. (2017). Interactive networks and social knowledge construction behavioral patterns in primary school teachers' online collaborative learning activities. *Computers & Education*, *104*(2017), 1-17. https://doi.org/10.1016/j.compedu.2016.10.011

About the Authors

Rony Ramot
Tel Aviv University
ronyramot@mail.tau.ac.il
ORCID: https://orcid.org/0000-0002-5650-9581
Rony Ramot is Doctoral student at Tel Aviv University's School of Education. The doctoral dissertation deals with research and development policy processes as reflected in university teacher education policy. After a decade in teaching and management positions in the Israeli education system, Rony currently serves as the head of the Alternative Teacher Education Unit at the Kibbutzim.

Gadi Bialik
Tel Aviv University
bialikga@tauex.tau.ac.il
Dr. Gadi Bialik is Senior Lecturer and Head of the Department of Administration and Organization of Education at the Kibbutzim College (2021) and teaching fellow at the Tel Aviv University School of Education. He specializes in applied educational research (R&D) and leads as a researcher with practitioners, urban systemic experimental fields that research and develop innovative processes and responses to educational challenges in the areas of innovative pedagogy, educational leadership and educational policy.

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