Contemporary School Psychology (2018) 22:413–423
https://doi.org/10.1007/s40688-018-0174-1

I Found it on Pinterest: an Exploration of Pinterest Content for Followers of the National Association of School Psychologists

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Published online: 2 February 2018

Abstract
School psychologists are tasked with the job to implement evidence-based practices (EBPs) in the schools and are increasingly using the internet and social media applications, such as Pinterest, to find intervention resources. Unfortunately, little is known about the typical patterns of use or of shared content gleaned from social media. A random sample of the National Association of School Psychologist's (NASP) followers on Pinterest was examined to better understand school psychologists' Pinterest use. Results show that NASP's followers are most often sharing content related to behavioral, social-emotional concerns (specifically coping skills) and general professional issues. The implications of disseminating web content through existing social media platforms are examined.

Keywords Social media · Professional development · Evidence-based practice · Social-emotional interventions

Increasingly, school psychologists and educational professionals are being called upon to utilize evidence-based practices (EBPs) to assist students with a variety of problems. As "general practitioners," school psychologists have a unique set of challenges given the breadth of issues for which they are asked to select, adapt, or design successful interventions (McKevitt 2012). Although the rationale for using only best practices and EBPs is clear, challenges remain related to finding strategies and programming that are portable, easy to implement, and relatively low- or no-cost depending on the needs of a school district. Currently, it appears as though the implementation of EBPs in schools is discouragingly low for a variety of reasons (Forman et al. 2013; Splett and Maras 2011). Specifically, financial barriers, time constraints, and competing priorities reduce the implementation of EPBs in schools (Forman et al. 2013).

Educational professionals have turned to the internet, specifically to social media applications like Pinterest and Teachers Pay Teachers, to find ideas for intervention strategies and to create grassroots communities of practice to share practical ideas (Ferriter 2011). Although online networks and communities of practice may help professional organizations and researchers to disseminate EBPs and thus facilitate more widespread implementation, they may also be a source of continued dissemination of content with questionable empirical basis. In particular, the lack of controls on the upload of materials on sites such as Pinterest and the lack of even the semblance of a peer review process can lead to the use of ineffective (at best) or possibly iatrogenic practices (at worst). Although the user-driven nature of social media is far from the rigorous scrutinizing process of peer-reviewed journals and clearinghouse initiatives (e.g., What Works Clearinghouse), the appeal may be related to simple strategies that are viewed as having high levels of face validity and portability created by peers working in similar environments. Because of the high potential for ease of dissemination and uptake, a better understanding of how existing social media platforms are being used by professionals in schools is important.

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Pinterest—an Online Consolidation Tool

Pinterest is a virtual bulletin board where users can post content from around the Internet and share "pinned" content among other users on the application. Pinterest requires a login to access, which is possible by providing an email address. Pinterest users may hide the content of pin boards (e.g., "secret boards") and only allow certain users access to the content; yet, the security settings do not allow for hiding the entire personal profile, or presence, on Pinterest (Mittal et al. 2013). Pinterest users may also elect to log in or join Pinterest via a Facebook, Twitter, or email account, and thus the content may be linked between two or three applications (i.e., if a user chooses to link Pinterest with Facebook, content will be linked between the two). In a sense, Pinterest content is much like a magazine and search engine in that users can page and scroll through content and then click on those images and see their original source around the internet.

The appeal of Pinterest among educators is growing. Currently, the Pinterest education board has the second highest number of followers (users) per pin, averaging 10.34 followers per education-related pin (Mittal et al. 2013). These pins provide educators with a new way of presenting and consolidating educational materials (Hansen et al. 2012). Pinterest is also being used to blend formal (in the classroom) and informal (outside of the classroom) learning by way of having students pin content related to their learning, create pins, or teachers pinning content to aid students with instruction (Baiyun and Thomas 2012).

Although empirical research on how Pinterest is being used by educational professionals, such as school psychologists and guidance counselors, to inform practice is limited, the topic is being more widely discussed in popular media (Cummings 2015). A recent article reported that some teachers are utilizing Pinterest as a way to supplement traditional professional development. Given that many teacher workshops for continuing education are limited in duration (one-time workshops) with a lack of follow-up coaching or specific techniques and strategies to support practice, Pinterest may potentially fill a gap that can help teachers to feel like they have a more practical resource or community from which to draw ideas. Pinterest may be thought of as a virtual borrowing of worksheets or classroom management ideas from the "friendly teacher down the hall."

Similarly, Cummings (2015) highlighted that Pinterest has recently launched a "hub" for teachers that includes boards with teacher resources that are broken down by grade level and content area. The development of a teacher-oriented hub on Pinterest may give educational professionals a sense of credibility in the materials hosted that may or may not be precise. For example, pins may link to collections of resources to help with managing student behavior in the classroom (e.g., "50 Ways to Get Kids to Pay Attention") but upon further examination includes mainly classroom décor crafts (e.g., student desk name placards) and links to such ideas as "Quiet Spray" (e.g., a spray bottle filled with water that a teacher may use to remind students to work quietly). Although educational professionals may use some of these tools and they may be whimsical and relatively innocuous, they could hardly be described as empirically validated strategies that improve students' on-task behavior. Given the wide reach, however, or social media platforms to disseminate best practices, it may be beneficial for professional organizations like the National Association of School Psychologists (NASP) to leverage Pinterest to host and share content. Unfortunately, little is known about how followers and practitioners make use of what is posted from professional organizations such as NASP.

Online Information-Seeking

Research related to professional use of Pinterest for evidence-based practice is in its infancy. Related research has focused on general trends in Pinterest use (Mittal et al. 2013) and internet information-seeking related to various health or disabling conditions (Hall et al. 2016). A review of the literature related to parent internet information seeking for neurodevelopmental disorders revealed that parents tend to only examine the first few search results and vet resources based upon their professional appearance (Hall et al. 2016). Thorough review of the quality or extent of internet-presented content is not a common practice among some users and may be related to time constraints, a lack of knowledge about how to critically evaluate content, or other factors. Findings related to parent use of internet materials may not necessarily reflect the use and vetting practices of educational professionals for work-related content.

Although professionals may be better consumers of educationally relevant content given their training, there are other factors that may have an impact on use patterns. Even if users were critically evaluating online information, there are questions related to what information is presented to users in the first place. Lesser understood are the algorithmic and other programming realities of how searched-for information is presented to users online. Information-seekers are shown information because of prior clicking and searching history thus biasing the results that individuals see in searches (Bar-Ilan 2005; McCracken 2011). If a user has a history of using higher-quality resources (e.g., WebMD, NASP, APA websites), what will be shown in subsequent searches will be of similar quality because they will be from related resources. If a user has a history of prior clicking to other resources of lower quality, those related resources will be shown in subsequent search efforts based on search engine personalization and optimization (Web Solutions of America 2017). Ethical implications related to the

complexity of algorithmic decision-making across search engines, social media platforms, and other computer-based interfaces are of continued concern that may have an effect on the impartiality of information sought and received online (Vieth and Bronowicka 2015).

Despite concerns with the mere presentation of search engine results, critical reviews of the information presented online reveal that even on reputable websites (e.g., national organizations) there are problems with the quality of the resources posted (Reichow et al. 2012). Studies that have examined the quality of information regarding treatment for autism have problems with misleading information about the efficacy and safety of interventions (Di Pietro et al. 2013; Stephenson et al. 2012). Specifically, websites have been found to inappropriately rate interventions as negative or iatrogenic despite evidence to the contrary (Stephenson et al. 2012) and have inadequate citations or citations used inappropriately in context (Di Pietro et al. 2013). Given that websites have clear limitations, it is difficult to fathom how to make recommendations to professionals and lay persons regarding how to best find accurate information online.

Content Consolidation and Pinterest

It seems that perhaps users are drowning in a sea of content but still thirsting for quality information (Lyman and Varian 2000). Clearinghouse models, such as the What Works Clearinghouse and the Clearinghouse for Military Family Readiness, have been immensely supportive for professionals by providing a consolidated resource for finding programming of vetted quality. Unfortunately, clearinghouses are not always feasible for online content because of the overwhelming volume and constant change of content presented. It would be nearly impossible for any single professional organization, institution of higher learning, or other group to monitor, vet, and disseminate the results of a comprehensive searching of the internet for the highest-quality content or most effective tools or ideas. Vetting resources may include critical examination of the empirical basis of content, a review of available literature, and component analysis for evidence-based strategies that would ensure some sense of the quality of information posted; however, these processes are time-consuming and labor-intensive. Although not set up for peer review or rigorous quality control, Pinterest fills a user-generated void in that it serves to consolidate online content for others. Professional organizations and leaders in the field may have an opportunity to shape the quality of content shared that may be a vehicle for dissemination to busy practitioners.

Present Study

School psychologists need simple ways to get ideas to design and implement interventions and strategies that work for students with a variety of needs. Unfortunately, while the internet has created a user-driven environment for fast sharing of content, it has left users the inordinate task of trying to sort through the seemingly infinite content with little guidance around determining quality indicators. Social media applications, specifically consolidation tools like Pinterest, provide a way for professional organizations and individual practitioners to merge together resources from around the internet that may be beneficial in their practice. The use of tools like Pinterest present a new opportunity for the dissemination of EBPs and other high-quality information, yet actual user behavior is not well understood.

Given the gap between the high traffic of Pinterest and the lack of knowledge about actual use by professionals, the present study, although exploratory, was guided by three primary research aims. The first research aim was to examine the content that NASP was sharing on Pinterest. This aim was addressed by examining the content and number of boards and pins, the number of followers, and the number of accounts that NASP itself was following. The second research aim was to describe and quantify the general content themes of the content that is shared by followers of NASP in terms of how the content relates to various domains of practice for school psychologists. The research team conducted both a deductive and inductive coding process (described in the "Method" section) based on a preliminary study of Pinterest content and built consensus for the best representation of the landscape of content being shared. The third research aim was to better elucidate and analyze the content that was being shared within content area domains. After refining and identifying various areas of commonly shared content, further inspection of themes within content areas (e.g., content types within a domain such as academics like reading, math, and writing) were coded. Overall, the present study was intended to better understand the landscape of content being shared to guide recommendations for professionals and future inquiry.

Method

The present study included a random sampling procedure of followers of the NASP Pinterest account in order to gain insight into the content generally selected and shared among NASP followers. Although selection of random pins of those posted by NASP is another proxy for content selection across users, sampling occurred at the user level in order to approximate how presumed school psychologists (or those in related fields) were determining relevant information worth sharing.

Definitions and Description of Pinterest Platform

To facilitate understanding of the present investigation, an overview of the Pinterest platform, including definitions of key terms, is presented. When a user logs in to the platform, they may log in with an email address or with another social media account (e.g., Facebook, Google). Users who join may create *usernames* (or handles) that may include their given name or a screen name that is not identifiable (e.g., Susan Smith or SusieS_2289). Users can choose how much demographic or other information that they include in their profile. Users of Pinterest are called *pinners.* Unlike other social media platforms, users cannot fully hide their presence on Pinterest but may create areas of content within their account that are not accessible unless by direct invitation to another member of the platform.

Upon entering the Pinterest web interface, users will see a series of images with captions underneath them called *pins*. Pinterest will present content organized by topic areas such as (but not limited to) Quotes, Food, Weddings, or Education. Pinterest content can also be searched by keyword in a search engine as a user could search Google. Pins can be uploaded by the user (e.g., pins that are created and shared with a photo that the user has taken of their crafts, ideas, or other work) but more often are from another website (e.g., an article from NASP Online, Huffington Post, vendor website, blog). When a user likes or wants to save the content for later, they can *pin* (or save) it to a *board*. Boards can be titled by the user as a way for them to organize content for various topics such as fashion, crafts, professional topics, or other personal content. Users can pin unlimited pins on their boards and can have unlimited boards on their account.

Users get customized views of pins when they log in to their account in two ways. First, the Pinterest platform includes advertisements and related pins that algorithmically are similar to content that the user has previously viewed or saved to their pin boards. Just as Google will customize advertisements and search results, Pinterest does the same. Second, pinners can *follow* various users or specific boards of various pinners as you would follow an account on Twitter or other social media. Thus, when the user pins to their overall account or specific boards within their account, the user who "follows" them will see these pins on their feed upon logging in to the platform.

Sampling Procedure

To approximate general pinning content across users who are followers of the National Association of School Psychologists (NASP), sampling occurred across user boards. Pinterest account content was randomly selected for inclusion in this study. User boards were not identifiable, and no attempt was made to contact users as the level of analysis was public domain content. The content of pin boards of 500 followers of the NASP Pinterest account were selected out of 5730 total accounts using *randomizer.org*. Randomizer.org is a free online tool that was developed to help obtain random samples for research purposes (Urbaniak and Plous 2013). Using this randomization process, the content shared by pinners to include boards and pins was then selected for coding for this study. Final coding was conducted on only 499 of the randomly selected followers' content as one of the random selections was a pinner who was a member of the research team and was eliminated due to concerns about bias.

Extraction of Pins

For each of the 499 randomly selected followers, the first 150 pins of each board that was professionally themed were extracted for later coding. Because the content of Pinterest boards change frequently, a "web scraping" technique was needed so that the pins from Pinterest could be extracted and then saved on to a computer for later analysis. Selenium WebDriver was modified by a computer programmer. The resulting pins, which included the associated image, URL of origin (or where the pin content was found on the internet), and the image file name (using an MP5 cryptographic hash), were all saved for consolidation and coding. The total sample of pins extracted included 35,248 pins, and of those pins, 28,052 were unique images which were later coded for content and network impact. Duplicate pins were determined by collapsing those pins that had the same image by cryptographic hash.

Development of Content Codes

Given that the primary research aims of the present study were to understand the topical landscape of the domains of interest in which followers of NASP were pinning, a series of iterations on the coding scheme were conducted. Before the web-scraping techniques were refined by our technology team, a preliminary study of a "hand" sample of 3000 pins was examined using an *a priori* coding scheme. The a priori coding scheme was created by the research team in an attempt to reflect domains of practice within school psychology and student services including social-emotional, academic, special education, ethics, assessment, intervention, and other areas of content. In the initial pilot of the coding scheme, the coding scheme revealed that over a third of pins were in an "other" category, thus not adequately representing the content that was sampled. In the second phase, the "other" codes were reexamined to create a coding scheme that would likely better represent the data from the automated data extraction. After combining the a priori codes with the emergent codes in the second review of the beta-test data, new combinatory system codes were designated.

The following codes were used in the present study with the full automated sample of pins: *social-emotional* (internalizing disorders, social skills interventions, coping skills, counseling or therapy, grief, other/general), *IDEA disability categories* (autism, emotional disturbance, specific learning disability, other health impairment, special education-related), *behavior* (classroom management, externalizing disorders, bullying), *multi-tiered systems of service* (MTSS), *academic-related* (math instruction, reading instruction, other subject area/general), *mental health-related* (e.g., DSM, specific diagnoses), *child development*, and *professional issues* (general work related, work-related tips, work-related jokes, office organization, advocacy related, professional books).

Retention of Pins for Coding

Pin boards were considered professional if they included a predetermined word or phrase associated with the school psychology profession. Inclusion terms were decided by the research team upon initial examination of pin boards in the sample. Terms were determined as part of the initial beta test of the procedures (described previously) and represented common terms that designated work-related content (as opposed to personal content like fashion, weddings, crafts, and beauty). Inclusion of the following designated a professional board: *school psychology* or *school psych*, *psychology* or *psych*, *work* or *career*, *school*, *social skills*, *Response to Instruction* (RtI) or *Response to Instruction and Intervention* (RtII), *school wide positive behavior supports* (SWPBS or SWPBiS), content related to the *Individuals with Disabilities Education Act* (IDEA) disability categories or the *Diagnostic and Statistical Manual, 5th Edition* (DSM-5), mental health disorders, *applied behavior analysis* (ABA), *classroom management*, conference related, *work-related jokes*, *coping skills*, *child development*, and *special education* (SPLED) related. Content on pin boards that did not meet criteria for professional content were not coded or examined further. Within professional pin boards, individual pins, up to the 150th pin, on professional boards were coded. The 150th pin was used as the cutoff for coding given the need to examine the most recently pinned images. Pins were examined and coded for content type.

Coding Procedures

Pin content coding was completed by three graduate students in school psychology. Two graduate students were trained on codes by the third student, who completed all beta-test coding, prior to the start of coding the current content. Reliability of coding was estimated by having two of the three coders independently code the same 30% of pins. Achieving kappa of 0.80 was set as the goal for reliability. An overall kappa coefficient of 0.802 was obtained, thus pin coding between coders was considered reliable.

"Other" Pins Within Designated Categories Other pins were coded into specific categories (i.e., Behavior—Other). In order to adequately capture other pin content, documents were created to classify these pins that fall under other categories. For example, if a pin's content consisted of procedures for a functional behavior analysis (FBA), it would fall under Behavior—Other; in the separate document, the pin's cryptogenic hash and the content, in this case FBA. Documents were kept in a shared drive that multiple users could access at one time. All pins classified as "other" were included on these documents for future reference.

Results

Research Aim No. 1: Characteristics of NASP on Pinterest

Descriptive information about the boards, pins, and followers was collected on the NASP's Pinterest board. NASP has 5730 followers and follows 26 Pinterest users. All of NASP's 27 boards included school psychology-related pins, and 1107 out of 1250 (88.56%) pins can be considered professional. On average, NASP has 3495.15 followers per board ranging from 3352 to 3660 followers per board. Generally, NASP has 46.30 pins per board ranging from 17 to 84 pins. NASP has 10 boards (37.0%) associated with ABA. For a full breakdown of the content of NASP's boards, see Table 1.

Research Aim No. 2: Content Shared Among NASP Followers

Overall Content Description Of the 26,503 non-duplicate pins in the sample, social-emotional and behavioral content made up over 50% of the content with social-emotional content having the highest percentage (33.32%). Professional issues (14.94%) and academic-related content (13.7%) were the next largest categories of pin content. IDEA categories (10.49%), child development (2.77%), mental health (2.52%), and MTSS (1.78%) were the following categories in frequency. Please see Table 2 for a description of the percentages for the non-duplicate pin counts as well as the comparison of percentages when the duplicate pins are added. In the following sections, content breakdown within each category will be described.

Relative Representation of Content A chi-square test for given probabilities was conducted to investigate whether certain content codes were overrepresented in the present sample. Social-emotional content shared by NASP Pinterest followers

Table 1 Professional content of NASP's boards ($N = 27$)

	Board total	Mean pin total	Mean followers
General work related	1	84	3660
RtII	1	55	3553
SWPBS or SWPBiS/behavior	1	62	3627
Externalizing disorders	1	29	3555
Internalizing disorders	1	23	3455
Autism	1	71	3602
TBI	1	17	3426
Professional books	1	29	3463
ABA	10	45.8	3488.1
Conference related	2	52	3360.5
Work-related jokes	1	39	3590
Work-related tips	1	29	3534
Bullying	1	53	3492
Child development	1	30	3437
Advocacy related	1	25	3394
Diversity	1	82	3436
MH related	1	60	3543

was overrepresented in the sample of non-duplicate pins ($\chi^2(7, n = 26{,}886) = 17{,}271.74$, $p < .001$). Because of the relatively large subset of coping-related pins in the sample (see Table 3), it was hypothesized that coping-related content on Pinterest is overrepresented in the overall sample. The mean number of pins shared across non-coping-related categories equates to 219.98 ($SD = 565.993$). A chi-square test for given probabilities between coping-related pin content and all other pin content supports the hypothesis that a certain pin content is overrepresented in the sample ($\chi^2(8, n = 26{,}886) = 9966.785$, $p < .001$). However, coping-related content was not found to be overrepresented in the overall sample. Further chi-square analyses for given probabilities revealed that coping content is one of the categories overrepresented within social-emotional-related content ($\chi^2(5, n = 8830) = 5842.997$, $p < .001$).

Research Aim No. 3: Content Analysis Within Domain Areas

Each content coding category also had secondary coding analysis to better understand what content was most represented within each category. See Table 3 for precise numbers of pins for each category (within non-duplicate pins only). In the social-emotional category, coping skills interventions followed by social skills interventions and counseling/therapy technique accounted for the majority of the content (over 75%). Information about internalizing disorders, other or general information (i.e., self-care, resiliency, trauma, and divorce), and grief comprised the remaining content in the social-emotional domain. Behavior was the next largest category in the overall sample. In this domain, classroom management accounted for

Table 2 Overall pin content percentages for randomly selected followers of NASP ($N = 499$)

Content category	Non-duplicate total N (%)	Full-sample total N (%)
Social-emotional	6497 (32.12)	8830 (33.32)
Behavior	3089 (15.27)	5427 (20.48)
Professional issues	3502 (17.32)	3959 (14.94)
Academic	3465 (17.13)	3632 (13.70)
IDEA disability categories	2116 (10.46)	2780 (10.49)
Child development	654 (3.23)	734 (2.77)
Mental health	548 (2.71)	669 (2.52)
MTSS	354 (1.75)	472 (1.78)
	$N = 20{,}225$	$N = 26{,}503$

Table 3 Description of sub-codes of pins within categories (*N* = 26,503)

Content category	Non-duplicate total *N* (within category %)
Social-emotional	8830
Coping skills	3853 (43.43)
Social skills	2069 (23.43)
Counseling/therapy	1031 (11.67)
General information	890 (10.08)
Internalizing disorders	853 (9.66)
Grief	152 (1.72)
Behavior	5427
Classroom management	1584 (29.19)
Externalizing disorders	1.356 (24.99)
General information	1.193 (21.98)
Bullying	350 (6.45)
Professional issues	3959
General content	2056 (53.64)
Work-related jokes	829 (21.63)
Professional books	278 (7.25)
Work-related tips	215 (5.61)
Office organization	196 (5.11)
Conferences/ABA/diversity	192 (4.85)
Advocacy	123 (3.21)
Academic	3632
Reading instruction	1614 (44.44)
Other subject area/general	1182 (32.54)
Math instruction	836 (23.02)
IDEA disability categories	2780
Autism	1012 (36.40)
Special education related	673 (24.21)
IEPs/unspecified information	290 (10.43)
Specific learning disability	188 (6.76)
Other health impairment	157 (5.39)
Hearing impairment	73 (2.62)
Emotional disturbance	70 (2.51)
Intellectual disability	69 (2.48)
Traumatic brain injury	53 (2.50)
Visual impairment	36 (1.29)
Multiple disabilities	5 (0.17)
Deaf-blindness	4 (0.14)
Child development	734
General child development	416 (56.67)
Early childhood/preschool	318 (43.32)
Mental health	669
DMS-5	362 (54.11)
General mental health	345 (51.57)
MTSS	472
Response to intervention and instruction	229 (48.52)
School-wide positive behavior support	227 (48.09)
Social-emotional learning programs	12 (2.54)
Other information	4 (0.84)

almost 30% of the behavior pins followed by externalizing disorders. The other behavior category comprised about 22% of the sample. Other codes comprised mostly information on executive functioning and sensory processing deficits and hypersensitivity. Smaller samples of the other behavior codes include pins related to functional behavior analysis (FBA), individual student behavior charts not associated with tier 2 interventions, and intrinsic motivation. Bullying was also represented in this category but to a much lesser degree than the other areas.

Professional issues comprised various work-related information that represented content that could be helpful with morale, organization, and basic skills to improve practice. General work-related content (i.e., WISC-V manuals; working memory information; and blogs with multiple school psychology resources, like *school psych everything*, https://sites.google.com/site/spsycheverything/) comprised over half of the content in the professional issues category. Work-related humor accounted for about one fifth of the content. Office organization, work-related "tips" (e.g., information on how to have a good interview; standardized testing information, PRAXIS, and EPPP; and internship information), advocacy, and professional books comprised about 20% of the content. Applied behavior analysis (ABA), conference-related information, and diversity issues were combined in this category and accounted for less than 2% of the content in this category. Although ABA may be appropriate for the behavior category, these pins were general information about theory of ABA and were not oriented to practice implications as were the pins in the behavior category.

Academic interventions and instructional content was coded for each instructional area. Reading instruction accounted for over 40% of the content in the academic area, followed by math instruction (23.02%). Other subject area instructions comprised the remaining 44% of academic pins. Pins related to other areas of language arts (i.e., writing, spelling, and grammar) made up most of the other academic pins. However, science and social studies pins, learning styles, and study skills were also coded within the other academic category. In the domain of academics, NASP Pinterest followers are mostly pinning content related to reading and other language arts-related topics (i.e., writing and grammar).

School psychologists are largely tasked with assessing for special education eligibility, and thus, the IDEA disability category content area accounted for a sizeable portion of the

overall sample. Within the IDEA disability content area, autism represented over a third of the pins (36.40%). Special education-related content (e.g., individualized education plan (IEP) goals, parent information about special education, and special education lesson plans) was the next highest area accounting for almost a quarter of the content in this area. General information related to Individualized Education Programs (IEPs) or more than one disability category accounted for about 10% of the sample. Specific learning disability, other health impairment, and emotional disturbance were the last of the categories, and each accounted for between 2 and 7% of the category pins. Specifically, speech-language impairment was made up of 7.09% of pins, specific learning disability (SLD) comprised 6.76%, other health impairment (OHI) included 5.39%, 2.62% fell in hearing impairment, emotional disturbance (ED) comprised 2.51% of pins, 2.48% fell in intellectual disability/mental retardation (ID/MR), traumatic brain injury (TBI) made up 2.50%, 1.29% of pins were coded as visual impairment, multiple disabilities made up 0.17% of the IDEA disability content, and 0.14% were coded as deaf-blindness.

The areas of child development (2.08%), mental health (1.90%), and MTSS (1.34%) were comparatively smaller subsets of the data extracted. Child development pins were composed of general child development information (e.g., stages of development and developmental milestones at all ages) and early childhood education or preschool information. Mental health pins were often related to the *Diagnostic and Statistical Manual of Mental Disorders—5th Edition* (DSM-5) or general information about mental health awareness and disorders that did not specifically relate to the DSM-5. The MTSS category included pins related to response to intervention and instruction, school-wide positive behavior support, social-emotional learning, or other information about MTSS models.

Discussion

NASP is one example of a professional organization that has chosen to leverage Pinterest as an avenue for sharing information with school psychologists and other educational professionals. The present study was aimed to understand the content that is shared by NASP and a random sample of its followers. Findings of the current study indicate that NASP is posting primarily professionally relevant content to its followers as opposed to utilizing Pinterest primarily for advertisements, conference recruitment, or other purposes that are not directly relevant to dissemination of best practices. This is encouraging given that it lends support to the idea that Pinterest may be one way to help support the use of practical EBPs for educators. Much of the content that NASP posted was professionally related, yet there were issues related to a small portion of NASP pin content being only accessible to members. Interestingly, NASP has many followers (over 5000) but compared to its users, does not engage many pinners (only 26). It is possible that the limited number of boards or users that NASP is following is related to trying to only follow the highest-quality content, yet this may constrain their overall opportunity to participate in the consolidation and vetting process for its followers.

Content that was shared among followers of NASP was examined qualitatively at primary (across domains) and secondary (within domains) levels. Of the content that was professionally related, there was a high level of pinning for topics related to coping skills, social skills, and other pins that seemed to have themes related to social-emotional adjustment (e.g., grief, group therapy, mindfulness) and consultation. Much of the professional pin content was related to social-emotional adjustment; therefore, it is important to understand how educational professionals are choosing social-emotional content, both on Pinterest and in general. Previous research has found that NASP members do not consume research related to social-emotional learning (SEL; McKevitt 2012). It is possible that practitioners do not have access to peer-reviewed journal articles and are unable to obtain the relevant information needed to implement EBPs (McKevitt 2012). Currently, NASP has pins linked to peer-reviewed journal articles, which could lead to better ease of access for practitioners with a NASP membership. For those that do not have membership with NASP, the problem of access to the best information remains a challenge.

Limitations and Future Directions

The present study has several limitations that are important to note. Use of an automated web scrape for the purpose of analyzing content is novel and allowed for the study of a larger volume of content than would have been possible with a by-hand examination of constantly changing content. Despite the advantages of collecting and consolidating a sample in this way, the present analysis had three primary limitations. First, the analysis of the content was constrained by a lack of examination of network impact and sharing. Given that Pinterest content is enormous, a sample of 30,000 pins has potential to help understand the nature of network sharing, which content gets the most attention, and thus more about the ways in which content of high quality could be better disseminated for practitioners. Specifically, future studies should employ the examination of similar pins shared across different users, network analysis of highly shared content, and continued examination of the kinds of content being pinned and shared. If there are specific pinners or organizations that serve as "hubs" or curators of content that is widely shared, a better understanding of how ideas move through the network may facilitate an understanding of trends as a proxy for areas of needed professional

development or trends that may be concerning (e.g., use of iatrogenic or unsubstantiated tools and resources).

Second, the volume of pins was analyzed at a broad level and did not allow for detailed analysis of the relative quality of the information. No attempt was made to link the resources pinned back to various websites that may be of wide varying quality. Similarly, the analysis was topical and did not include any formalized examination of the nuances of indicators of usefulness or empirical basis such as whether or not instructions for use were present, whether or not peer-reviewed references were included, or whether or not the strategies were feasible within a classroom or school setting. Given that this level of scrutiny was not applied to the current study, many questions must be answered to better understand the trends in strategies that are shared among educational professionals or related service providers.

Another limitation of the present study was related to the nuances of the coding scheme itself. Subsequent examination of the content revealed areas that were highly pinned (e.g., coping skills, social skills, and other social emotional content), yet those areas include complicated and overlapping content that may relate to other therapeutic interventions. For example, a pin that includes the word "coping" but then also includes strategies that are related to cognitive behavior therapy (e.g., cognitive reframing) or social emotional learning (e.g., emotion identification) could be coded several ways depending on the scope of the analysis or the research question. Qualitative analysis of content should continue in future research with clear rigor and intentions related to what aspects of multifaceted content are being examined that may help elucidate more of the distinctions of content that professionals are sharing.

Further, there are strategies that can be part of various evidence-based programs (e.g., mood ratings, journaling) that have not necessarily been studied in isolation but are frequently used by practitioners successfully. The present study did not examine the ways in which content that is pinned may represent evidence-based strategies, programs, or theoretically grounded content. Future research that could help to sort out the details of the "what" and "how" of these content areas could include component analysis (Chorpita and Daleiden 2009; Embry 2004). Component analysis may include reviews of the literature and existing evidence-based programming to find common areas of program change agents (e.g., diaphragmatic breathing, problem solving techniques, cognitive restructuring). Upon coding of shared content on Pinterest, understanding the relative use and interest in various components may shed light on whether these grassroots efforts have any reflection in evidence-based practice.

Finally, the present study only analyzed content being shared but largely ignored the role of the user in the process of that sharing. Sampling and coding content on Pinterest is only the beginning of understanding dissemination, adoption, and implementation as it relates to social media use. A clear connection between content being shared, how users vet content for quality, and an understanding of how or if the content is implemented are all important next steps in this line of research. Survey and implementation work around how school psychologists and other educational professionals select are advised. The use of social media and internet applications that are already part of the daily online life of practitioners has enormous potential to support information dissemination, yet more research is needed to understand the degree to which this can support the uptake of best practices.

Implications for Practice

Professionals who serve children in schools are in effect the "boots on the ground" that manage significant role strain and mounting pressures (Castillo et al. 2016). The idea that practitioners should go to original, source literature for the best information about how to do their jobs is limited by simple practicalities such as access to peer-reviewed journals and whether or not those manuscripts offer classroom or school-ready strategies and tools that can be transported into the schools in the absence of coaching and support. If educational professionals are looking for portable, simple, and practical ideas to support their practice, platforms like Pinterest are emerging to serve some of those needs. Broadly, more work is needed to better understand the nuances of trending content that followers find important to pin. Further research should examine user attitudes around pin selection and relevant topic areas. Selection of pins may be related to areas of need for practitioners but may also reflect other processes related to the appearance, perceived appeal for children (e.g., fun, colorful, engaging), and perception of creativity of the post as opposed to the content or need it is designed to fill.

A systematic vetting of momentarily changing and expanding content on the internet is likely impossible. Despite the impracticality of a peer-reviewed system (such as for peer-reviewed journals or clearinghouses), there may be simple guidelines to help support more responsible use of tools found on Pinterest. It is important for professionals to have a set of recommendations and easy guidelines to help support their critical evaluation of tools found online that can facilitate the use of quality materials with an evidence base. Using Pinterest in a thoughtful manner can provide practitioners with a network of support and widespread sharing of EBPs. The following heuristics may be useful for making informed decisions about using Pinterest and online content. Deciding whether or not the content of the pin has an evidence base may include a few simple strategies.

Users may want to consider three key questions for vetting Pinterest content. First, does the content link to a web source from a high-quality resource (*.edu*, *.gov*, or *.org* domain) or is it shared by a professional organization? If the content is

associated with a higher-quality resource, there may be more confidence that the content is evidence-based. If the content is not associated with a professional organization or other-quality source, it may be important to consider other indicators of quality. Second, is the content associated with a published evidence-based program or curriculum? Sometimes pins can be traced back to particular programs or curricula such as Promoting Alternative Thinking Strategies (PATHS) or Reading Mastery. If a source refers a user to a vendor of such a program, this may be a good indicator of a quality resource. Finally, if the content is not associated with a known program or curriculum, does the content have similar features to or core components of another evidence-based program or curriculum? Many pins may have content that is associated with evidence-based practices like components of phonics-based curricula for reading or applied behavior analysis (ABA) strategies for challenging behavior. Although the content may not directly link to a vendor, researcher, or professional group, the content may be largely based on an EBP. Although these guiding questions are far from exhaustive, they may serve as a stepping stone for helping professionals to be more discerning in their selection of tools and strategies.

Generally, use of Pinterest may provide important avenues for finding low- or no-cost printables, activities, and strategies for working with children with a variety of problems. Using the resources, responsibility and critically evaluating their quality is essential. Future research should include perspectives of the user, more distinctive coding of multilayered content, and examination of the relative evidence base of the resources. Making use of the extant networks online in a way that is thoughtful may be one way to serve closing the gap in research to practice for busy professionals.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any other authors.

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