

2-1-2014

Parent Internet Use During a Child's Emerging Adulthood: Implications for Extension

Chelsea A. Petree

University of Minnesota- Twin Cities, cpetree@umn.edu

Jodi Dworkin

University of Minnesota- Twin Cities, jdworkin@umn.edu



This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

Recommended Citation

Petree, C. A., & Dworkin, J. (2014). Parent Internet Use During a Child's Emerging Adulthood: Implications for Extension. *The Journal of Extension*, 52(1), Article 34. <https://tigerprints.clemson.edu/joe/vol52/iss1/34>

This Feature Article is brought to you for free and open access by the Conferences at TigerPrints. It has been accepted for inclusion in The Journal of Extension by an authorized editor of TigerPrints. For more information, please contact kokeefe@clemson.edu.

Parent Internet Use During a Child's Emerging Adulthood: Implications for Extension

Abstract

Parents frequently use the Internet to connect with professionals and other parents for information and support, but parents of emerging adults have fewer resources to rely on than parents of younger children. This article explores how parents of 18 to 25 year olds used the Internet to connect with others, including differences by parent age, education, and income. Findings reveal that parents of emerging adults used a variety of activities for parenting and used specific activities for different purposes. Findings directly benefit Extension professionals who aim to address the needs of parents of emerging adults via the Internet.

Chelsea A. Petree
Parent Program
Assistant Director
cpetree@umn.edu

Jodi Dworkin
Associate Professor
and Extension
Specialist
jdworkin@umn.edu

University of
Minnesota-Twin Cities

Introduction

Advances in technology have enabled parents to have nearly unlimited access to information about parenting. Parents frequently use the Internet to connect with professionals and peers in efforts to find information, advice, or support (Dworkin, Connell, & Doty, in press; Rainie et al., 2005). Research, however, has focused on parents of young children; there is little information about how parents use online resources as they negotiate new roles that come with parenting a child transitioning to adulthood. The research reported here aimed to address this gap by exploring how parents of emerging adults used specific online activities for parenting, identifying clear implications for Extension professionals working with parents of emerging adults.

Conceptual Framework

Emerging adulthood, the period between ages 18-25, is characterized by transitions such as leaving home, beginning school or a career, establishing economic independence, marrying, and having children. This is also a time when parent-child relationships shift from child dependence on parents to a more egalitarian relationship between adults (Aquilino, 1997; Cowan, 1991). It has been described as a period of semiautonomy, as children take on some of the responsibilities of independent living but leave others to parents (Arnett, 2000). Transitioning to adulthood affects the entire family, and parents may look for support as they negotiate shifting relationships. To inform work with parents of emerging adults, this article uses concepts from emerging adulthood that

emphasize the importance of considering parents' need for information and support at a time when they are likely seeking opportunities to connect with others.

Literature Review

Internet Use

The Internet has greatly influenced the way we share information. In 2010, approximately 80% of American adults used the Internet (Smith, 2010). Over half of Americans reported having Internet access in their homes, and over 90% of libraries provided free Internet access (U.S. Census Bureau, 2012; Zaidman-Zait & Jamieson, 2007). Information found on the Internet is easily accessible and offers a wide variety of information (Zaidman-Zait & Jamieson, 2007). Parents in particular have been found to be active users of the Internet (Walker, Dworkin, & Connell, 2011), enabling them to connect with professionals or other parents.

Connecting with Others

Parents connect with others in a variety of ways, including seeking information and support formally through professionals or informally through peers (Ebata & Dennis, 2011; Rahi, Manaras, & Barr, 2003). Advances in technology have provided innovative ways for parents to connect with professionals and other parents, and parents of college students have been found to prefer to receive information electronically (Petree, 2012). Not only can parents seek information and advice online, but Internet users can also build community and use online communication to exchange advice, resources, and parenting approaches (Hall & Irvine, 2009; Moseley, Freed, & Goold, 2011; Rainie et al., 2005).

Parents of emerging adults, however, do not have as frequent contact with professionals, such as pediatricians, and do not have as many resources available to them as parents of younger children. Additionally, parents of older children may have unique needs and expectations of online activities (Ebata & Dennis, 2011), but these are unknown because most studies on parent Internet use have focused on parents of young children. As dynamics between parent and child become more equal during emerging adulthood, parents may seek advice about adjusting to new roles and supporting children through these transitions (Aquilino, 1997). Undoubtedly, parents of older children can benefit from a connection with others, but we do not know how they develop and maintain these connections.

Demographic Differences in Internet Use

Demographic characteristics, such as age, education, and income, can create different opportunities for exposure to technology and opportunities to learn skills needed to access the Internet (Alberts & Hayes, 2003; Doty, Dworkin, & Connell, 2012; Rothbaum, Martland, & Janssen, 2009; van Dijk, 2006). Research has found that younger generations and adults with higher education and income used the Internet more than older generations and adults with lower education and income (Jansen, 2010; Jones & Fox, 2009; Rainie et al., 2005). It is unclear if these differences persist for parenting and for parents of emerging adults in particular.

Purpose and Research Questions

The purpose of this article is to describe how parents of 18-25 year olds use the Internet for parenting, including reasons why parents choose different online activities. This article contributes to existing literature by including a sample of parents of emerging adults, who are rarely considered in studies on parent Internet use, and by closely examining the functions of Internet activities. Specifically, there are two research questions:

1. How are parents of 18-25 year olds using the Internet (devices used; length of use; and frequency of use)?
2. What online activities are parents using to connect with others and for what reasons are parents using online activities?
 - a. How does parents' use of the Internet to connect with others differ by parent age, education, and income?

Method

Participants

The research was part of a larger project designed to provide information on the reasons why and ways in which parents use technology. Beginning in May of 2010, data were collected through an online survey. Parents were recruited to participate through e-mail listservs of professionals that have a nationwide reach, Facebook pages, and parenting blogs. Potential participants were directed to a website to learn about the project and complete the survey. The online recruitment and survey means that participants are Internet users, an appropriate sample in determining how parents use online resources to connect with others.

The final sample included 747 parents (mean age=51.4 years) who reported having a child between the ages of 18 and 25 (Table 1).

Table 1.
Demographic Characteristics of Participants (N=747)

Characteristic	<i>n</i>	%
Relationship		
Biological parent	733	98.1%
Step parent	25	3.3%
Adoptive parent	20	2.7%
Grandparent or Foster parent	4	0.5%
Gender		

Female	632	84.6%
Male	115	15.4%
Race		
White or Caucasian	694	92.9%
Non-White	53	7.1%
Education		
Less than high school	2	0.3%
High school graduate	28	3.7%
Business, technical, or vocational school AFTER high school	35	4.7%
Some college, no 4 year degree	106	14.2%
College graduate	288	38.6%
Post-graduate training/professional school	288	38.6%
Employment status		
Employed full-time	455	60.9%
Employed part-time	160	21.4%
Do not work outside the home	81	10.8%
Unemployed, looking for work	31	4.1%
Retired	28	3.7%
Student	19	2.5%
Approximate annual household income		
Less than \$10,000	5	0.7%
\$10,000-under \$20,000	7	0.9%
\$20,000-under \$30,000	14	1.9%
\$30,000-under \$40,000	21	2.8%
\$40,000-under \$50,000	36	4.8%
\$50,000-under \$75,000	121	16.2%
\$75,000-under \$100,000	184	24.6%
\$100,000 or more	359	48.1%
Marital status		
Married or living with partner	653	87.4%

Divorced, separated, single, or widowed	94	12.5%
Geographic area		
Suburban	451	60.4%
Rural	177	23.7%
Urban	119	15.9%

Measures

Internet Access

Three questions were used to describe how parents accessed the Internet. First, participants were asked, "Do you use any of the following" and responded "yes" or "no" to three devices: "desktop computer"; "laptop computer"; and "Blackberry, Palm, iPhone, or other personal digital assistant (PDA)." Second, participants were asked, "How long have you been using the Internet, including using email?" and responded using a 6-point Likert scale from "less than 6 months" (1) to "more than 10 years" (6). Finally, participants were asked, "How frequently do you access the World Wide Web (WWW) from the following locations" and were provided five locations (Table 2). Participants responded on a 5-point Likert scale from "never" (1) to "daily" (5).

Table 2.
Internet Access Location (N=747)

Access Location	Frequency					
	Never	Less Than Once a Month	Monthly	Weekly	Daily	N/A
Home	0.4%	0.7%	0.4%	7.4%	91.2%	0.0%
Work	3.2%	1.3%	1.5%	5.5%	70.1%	18.3%
Handheld device	34.3%	5.8%	5.9%	9.2%	24.4%	20.5%
School	5.5%	1.2%	0.4%	0.9%	6.6%	85.4%
Public terminals	42.0%	33.2%	8.0%	1.7%	0.5%	14.5%

Activities Related to Parenting

Participants were asked how often they ever do 21 activities online, responding using a 6-point Likert scale from "never" (1) to "several times a day" (6). Participants who reported that they ever do an activity received a follow-up question, "How often do you do these activities for parenting?"

Parenting was defined as "all things you do to take care of your children and support their growth

and development. Think about all of the things that help you in your role as a parent. For example, you may use the Internet to shop for something for your child or follow a blog about parenting." The study reported here focused on five activities that can be used to connect with others: "post on or read discussion boards or chat rooms"; "send or read e-mail"; "read emailed newsletters (*Just in Time Parenting*, newsletters from school, 4-H)"; "use social networking sites (Facebook, MySpace, Cafemom, etc.)" (SNS); and "participate in online classes, workshops, or webinars."

Functions of Activities Related to Parenting

Participants who reported that they frequently do an activity for parenting (weekly or more for discussion boards, email, and SNS; monthly or more for emailed newsletters and online classes) received a question asking about the function of that activity for parenting: "You said you use [activity] for parenting. Can you tell us more about how this helps you as a parent?" Participants were asked to check all of the reasons they do the activity. The study reported here focused on the functions related to connecting with others: "receive information, advice, or support from other parents"; "communicate with professionals"; "build my support network"; and "connect to greater community."

Age, Education, and Income

Participants reported age, highest level of education, and total family income (Table 1).

Results

For all variables of interest, missing data ranged from 0%-13.7% missing. Patterns of missingness revealed that missing values were missing at random and could be explained by variables that were not of direct interest. As a result, expectation maximization was used to impute values for missing data, as well as "don't know or prefer not to answer" responses for education and income variables (Johnson & Young, 2011). Analyses were conducted in SPSS 17.0.

Internet Use

To address the first research question, how are parents of 18-25 year olds using the Internet, descriptive analyses were conducted. Most parents used desktop (90.6%) and laptop computers (81.5%); fewer used a PDA (39.6%). A large percentage of parents (69.9%) had been using the Internet for more than 10 years; 23.6% had been using the Internet for 7-10 years, 6.0% for 4-6 years, and 0.5% for fewer than four years. Most parents accessed the Internet from home and work daily (Table 2).

Online Activities for Parenting

The second research question, what online activities are parents doing to connect with others and for what reasons are parents using online activities, was explored in two steps. First, descriptive analyses examined the frequency that parents used activities for parenting. The top activities used at least once a day were email and SNS. Parents used emailed newsletters weekly and monthly. Many

parents reported never using online classes or discussion boards (Table 3).

Table 3.
Frequencies of Activities for Parenting (N=747)

Activity	Frequency			
	Never	Monthly or Less	Weekly	Once a Day or More
Email	2.3%	7.3%	19.7%	70.6%
SNS	13.0%	30.9%	23.6%	32.5%
Emailed Newsletters	6.3%	44.7%	31.5%	17.6%
Discussion boards	42.6%	46.3%	5.5%	5.6%
Online classes	64.4%	31.3%	2.1%	2.2%

Second, in order to explore differences in what activities were used for, Cochran's Q tests were computed. Cochran's Q is a nonparametric test that allows testing for differences between proportions. Specifically, the percentages of parents who used an activity for each function were compared within that activity (Table 4). Cochran's Q tests revealed that significantly more parents used discussion boards to receive information from other parents than to build a support network and significantly more parents used email to communicate with professionals than to receive information from other parents. Significantly more parents used SNS to build a support network than to connect with the greater community, and significantly more parents used online classes to communicate with professionals and connect with the greater community than to receive information from other parents.

Table 4.
Percentage of Parents that Use Activities to Connect with Others

	Functions of Online Activities				
	Receive Information	Communicate with Professionals	Build Support Network	Connect with Greater Community	Cochran's Q
Weekly or more					
Discussion boards (n=83)	49.4% ^a	--	32.5%	--	25.04*
Email (n=675)	29.5%	53.5% ^b	--	--	100.17*
SNS	--	--	c	12.9%	50.52*

(n=419)			33.2%		
Monthly or more					
Emailed newsletter (n=609)	--	32.7%	--	34.3%	0.88
Online classes (n=59)	25.4%	45.8% ^b	32.2%	45.8% ^b	16.21 ^{**}
<p>a Significantly greater than build support network</p> <p>b Significantly greater than receive information</p> <p>c Significantly greater than connect with greater community</p> <p>* $p < .001$</p> <p>** $p < .05$</p>					

Demographic Differences

To explore how parents' use of the Internet differed by parent age, education, and income, t-tests were computed. Parents who used discussion boards, email, and online classes to receive information were significantly younger than parents who did not [discussion boards; $M = 48.29$ years vs. $M = 51.19$ years; $t(81) = 2.94$, $p = .004$]; [email; $M = 50.36$ years vs. $M = 51.70$ years; $t(673) = 3.02$, $p = .003$]; [online classes; $M = 47.80$ years vs. $M = 54.05$ years; $t(57) = 3.33$, $p = .002$]. Parents who used email to communicate with professionals were significantly younger than parents who did not [$M = 50.74$ years vs. $M = 51.71$ years; $t(673) = 2.94$, $p = .003$]. Parents who used email and online classes to receive information from other parents had a significantly lower annual income than parents who did not [email; $M = 6.81$, vs. $M = 7.06$; $t(673) = 2.12$, $p = .034$]; [online classes; $M = 5.87$ vs. $M = 6.73$; $t(57) = 2.19$, $p = .033$]. Parents who used SNS to connect to the greater community had a significantly lower income than parents who did not [$M = 6.51$ vs. $M = 7.04$; $t(417) = 2.62$, $p < .009$]. No significant differences in education emerged.

Discussion

Because family members' lives are interconnected, parents are affected by the transitions that take place during their child's emerging adulthood. Parents connect with others, frequently online, in order to seek information or support as they negotiate these transitions. Because there is a lack of research about how parents of emerging adults connect with others online, this article provides valuable information to Extension professionals who work to address the needs of parents and families through online programming.

Consistent with research on parents with children of all ages (Walker et al., 2011), findings revealed

that parents of emerging adults have used the Internet for several years, access the Internet from multiple locations, and use a variety of activities. However, what stands out in the study are the ways in which parents are using the Internet specifically for parenting. Parents most frequently used email and SNS for parenting. This may be due to the fact that these activities are easy to use and highly accessible. Parents may also be using these methods because their emerging adult children use email and SNS. One article found that 72% of 18-29 year-olds used SNS (Lenhart, Purcell, Smith, & Zickuhr, 2010). Because most American emerging adults leave the parental home by age 18-19 (Arnett, 2000), parents may already be using these methods in an effort to remain in contact with children. On the other hand, resources that require more work to locate and that are often topic specific (e.g., discussion boards and online classes) were used less frequently.

Consistent with this, online activities were found to be used for different purposes. Parents who used discussion boards did so in order to receive information from other parents, while parents used SNS to build a support network and used email and online classes to communicate with professionals. These results provide critical information to guide all Extension professionals in considering the goals of a program and intentionally choosing the most appropriate technology tool to reach those goals.

Findings also revealed demographic differences in how parents used the Internet for parenting. Although age differences were small, younger parents were more likely than older parents to use discussion boards, email, and online classes to receive information from other parents and to use email to communicate with professionals. This finding supports previous research that has shown that younger adults use the Internet more than older adults (Jones & Fox, 2009).

While income has previously been found to make a difference in Internet use in that individuals, including parents, with higher incomes used the Internet more than those with lower incomes (Doty et al., 2012; Jansen, 2010; van Dijk, 2006), we found that parents who used email and online classes to receive information and used SNS to connect to a greater community had lower incomes than parents who did not use these activities. Although these findings appear to contradict previous findings, a recent article revealed that comfort with technology was more important to frequency of Internet use for parenting than income (Doty et al., 2012). Parents with lower incomes may be using the Internet more because it is free and easily accessible compared to other resources, such as doctors or expensive parenting classes. In fact, access to the Internet has been found to no longer be a major barrier to Extension work in low-income communities (Kudryavtsev, Krasny, Ferenz, & Babcock, 2007).

Implications

Parents have been found to value information from professionals and peers, and Extension educators have the ability to provide both resources to clients (Ebata & Dennis, 2011; Rahi et al., 2003). For example, professionals can use forums such as discussion boards and social networks to provide information and facilitate communication among users, providing clients the benefits of expert advice and shared experience.

Effective parenting education programs respond to participant needs and preferences (DeBord et al., 2006; Ebata & Dennis, 2011). With such high rates of parent Internet use, it is critical that research

support Extension in better understanding how to use the Internet to meet parents' needs. Findings, however, point more broadly to the importance of considering participant needs and preferences in all areas of Extension. Findings from the study reported here provide critical information for program development and delivery via the Internet, specifically with parents of emerging adults.

- Extension professionals should consider the intended purpose of programming before choosing a platform to deliver information and resources.
- Extension professionals must consider the population of interest, because demographic characteristics may lead to differing levels of access to and comfort with online resources.
- Because parents most frequently used email and SNS, Extension professionals should use these activities to connect with parents on a regular basis. Emailed newsletters are an appropriate activity to connect with parents weekly or monthly.
- If professionals are seeking to connect parents with one another or build a support network for parents, discussion boards and SNS are appropriate. To communicate directly with parents, email and online classes are more appropriate.
- Extension professionals need to remain up-to-date about rapidly changing technologies in order to continue to develop programming and deliver information that effectively reaches parents of children of all ages.

Limitations and Future Research

While this article provides critical information for Extension, findings should be considered in light of a few limitations. As many states are now investing heavily in online resources, future research should explore the types of information parents seek, from whom parents seek support, and whether or not the information received is accurate. This is necessary, because parents have specific problems and needs that might not be addressed by generic programming (DeBord, Roseboro, & Wicker, 1998). Additionally, in order for Extension to best meet the needs of the populations they work with, it is essential to continue to examine how best to deliver information for specific purposes.

Although age and income differences were statistically significant, these findings should be interpreted cautiously. Differences by age and income were small and may not provide meaningful information about distribution of online materials. More precise measurement in future research would allow for a more nuanced exploration of how demographic characteristics impact parent Internet use.

Additionally, the sample was comprised primarily of White mothers with higher education and incomes than the overall population. While these are the parents who are using the Internet for parenting and likely the population many Extension programs reach, future research can strive for more diverse sampling in order to explore what methods might be effective in reaching parents who are less active Internet users.

Conclusion

Because we know little about what parents of emerging adults are doing online, beginning with a descriptive study provides the groundwork essential to developing complex causal studies exploring relationships between variables. These findings directly benefit Extension professionals who wish to use the Internet to provide information and support to parents of emerging adults.

Acknowledgments

This research was supported by a Minnesota Agricultural Experiment Station grant to the second author.

References

- Alberts, D. S. ,& Hayes, R. E. (2003). Power to the edge: Command...Control...In the information age. *Information Age Transformation Series*. Washington D.C.: Command and Control Research Program.
- Aquilino, W. S. (1997). From adolescent to young adult: A prospective study of parent-child relations during the transition to adulthood. *Journal of Marriage and Family*, 59(3), 670-686.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480.
- Cowan, P. A. (1991). Individual and family life transitions: A proposal for a new definition. In P. A. Cowan & M. Hetherington (Eds.), *Family transitions* (pp. 31-57). New Jersey: Lawrence Erlbaum.
- DeBord, K., Bower, D., Goddard, H. W., Wilkins, J. K., Kobbe, A., Myers-Walls, J. A., Mulroy, M., & Ozretich, R. (2006), A professional guide for parenting educators: The National Extension Parent Educators' Framework. *Journal of Extension* [On-line], 44(3). Article 3FEA8. Available at: <http://www.joe.org/joe/2006june/a8.php>
- DeBord, K., Roseboro, J. D., & Wicker, K. M. (1998). Creative approaches to parenting education. *Journal of Extension* [On-line], 36(5). Article 5FEA1 Available at: <http://www.joe.org/joe/1998october/a1.php>
- Doty, J. L., Dworkin, J., & Connell, J. H. (2012). Examining digital differences: Parents' online activities. *Family Science Review*, 17(2), 18-39.
- Dworkin, J., Connell, J., & Doty, J. (2013). A literature review of parents' online behavior. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 7(2). Retrieved from: <http://cyberpsychology.eu/view.php?cisloclanku=2013052301&article=2>
- Ebata, A. T., & Dennis, S. A. (2011). *Family life education on the technological frontier*. In S. F. Duncan & H. W. Goddard (Eds.), *Family life education: Principles and practices for effective outreach* (pp. 236-262). Thousand Oaks, CA: SAGE Publications.
- Hall, W., & Irvine, V. (2009). E-communication among mothers of infants and toddlers in a community-based cohort: A content analysis. *Journal of Advanced Nursing*, 65(1), 175-183.

- Jansen, J. (2010). Use of the Internet in higher-income households. Pew Internet & American Life Project. Retrieved from: <http://pewinternet.org/Reports/2010/Better-off-households.aspx>
- Johnson, D. R., & Young, R. (2011). Toward best practices in analyzing datasets with missing data: Comparisons and recommendations. *Journal of Marriage and Family*, 73(5), 926-945.
- Jones, S., & Fox, S. (2009). Generations online in 2009. Pew Internet & American Life Project. Retrieved from: <http://pewinternet.org/Reports/2009/Generations-Online-in-2009.aspx>
- Kudryavtsev, A., Krasny, M., Ferenz, G., & Babcock, L. (2007). Use of computer technology by educators in urban community science education programs. *Journal of Extension* [On-line], 45(5). Article 5FEA2. Available at: <http://www.joe.org/joe/2007october/a2.php>
- Lenhart, A. Purcell, K., Smith, A. & Zickuhr, K. (2010). Social media and young adults. Pew Internet & American Life Project. Retrieved from <http://pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx>
- Moseley, K. L., Freed, G. L., & Goold, S. D. (2011). Which source of child health advice do parents follow? *Clinical Pediatrics*, 50(1), 50-56.
- Petree, C. A. (2012). Boomerang families: Navigating the parent role as students move back home. *AHEPPP Journal*, 3(1), 2-16.
- Rahi, J. S., Manaras, I., & Barr, K. (2003). Information sources and their use by parents of children with ophthalmic disorders. *Investigative Ophthalmology and Visual Science*, 44(6), 2457-2460.
- Rainie, L., Fox, S., Horrigan, J., Fallows, D., Lenhart, A., Madden, M., Cornfield, M., & Carter-Sykes, C. (2005). Internet: The mainstreaming of online life. Pew Internet & American Life Project. Retrieved from: http://www.pewinternet.org/~media//Files/Reports/2005/Internet_Status_2005.pdf.pdf
- Rothbaum, F., Martland, N., & Janssen, J. B. (2009). Parents' reliance on the Web to find information about children and families: Socio-economic differences in use, skills, and satisfaction. *Journal of Applied Developmental Psychology*, 29(2), 112-128.
- Smith, A. (2010). Home broadband 2010. Pew Internet and American Life Project. Retrieved from: <http://pewinternet.org/Reports/2010/Home-Broadband-2010.aspx>
- U.S. Census Bureau. (2012). Computer and Internet Use in the United States: 2010. Retrieved from www.census.gov
- Van Dijk, J. A. G. M. (2006). Digital divide research, achievements, and shortcomings. *Poetics*, 34, 221-235.
- Walker, S. K., Dworkin, J., & Connell, J. H. (2011). Variation in parent use of information and communications technology: Does quantity matter? *Family & Consumer Sciences Research Journal*, 40(2), 106-119.

Zaidman-Zait, A., & Jamieson, J. R. (2007). Providing web-based support for families of infants and young children with established disabilities. *Infants & Young Children*, 20(1), 11-25.

Copyright © by *Extension Journal, Inc.* ISSN 1077-5315. Articles appearing in the Journal become the property of the Journal. Single copies of articles may be reproduced in electronic or print form for use in educational or training activities. Inclusion of articles in other publications, electronic sources, or systematic large-scale distribution may be done only with prior electronic or written permission of the Journal Editorial Office, joe-ed@joe.org.

If you have difficulties viewing or printing this page, please contact [JOE Technical Support](#)