The Effects of Universal Classroom Management: A Meta-Analysis

Regina M. Oliver
Vanderbilt University

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Goals:
- Discuss why effective classroom management is important
- Review prior research on classroom management
- Provide overview of the meta-analysis with results
- Discuss implications for research and practice

What is Classroom Management?
- Instructional management vs. behavioral management
- Universal vs. secondary vs. tertiary
Classroom Management Definitions

- “The provisions and procedures necessary to establish and maintain an environment in which instruction and learning can occur”—National Society for the Study of Education Yearbook (Duke, 1979 in Emmer & Stough, 2001)
- “The actions and strategies teachers use to solve order in the classroom”—(Boyle, 1986 in Emmer & Stough, 2001)

Classroom Management Definition

- “Any action a teacher takes to create an environment that supports and facilitates both academic and social-emotional learning”—(Evertson & Weinstein, 2006)

Why is Classroom Management Important?

- Single most common request for assistance from teachers is related to behavior and classroom management (Rose & Gallup, 2005)
- School discipline issues such as disruptive classroom behavior increase teacher stress and burnout (Burke, Greenglass, & Schwarzer, 1996; Smith & Smith, 1996)
**Insufficient Classroom Management Competencies**

- Teachers find it more challenging to meet the instructional demands of the classroom (Emmer & Stough, 2001)
- Teachers will be less effective in improving student outcomes in academics (Tooke, 1997)
- Higher rates of discipline problems in the classroom (Berliner, 1986; Espin & Yell, 1994)
- Lost instructional time and decreased academic engagement (Gunter et al., 1993)

**Prevention Efforts**

- Children’s behavior is shaped by the social context of the environment during the developmental process
- The progression and malleability of maladaptive behavior is affected by classroom management practices of teachers in the early grades (Greer-Chase et al., 2002)
- Aggressive students in aggressive, disruptive classroom environments are more likely to be aggressive in later grades (Greer-Chase et al., 2002)

**Prior Research**

Falls into two broad categories:
1. Observation studies used to identify how effective teachers organize and manage their classrooms
2. Experimental studies examining components of classroom/behavior management in isolation or in various combinations
Typical Classroom Management Characteristics (Emmer & Stough, 2001)

1. Focus on prevention rather than reactive approaches
2. Explicitly teach desirable behaviors
3. Establish and teach classroom rules and routines
4. Monitor student behavior and provide reinforcement and consequences

Critical Features of Classroom Management (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008)

1. Maximize structure and predictability
2. Post, teach, review and provide feedback on expectations
3. Actively engage students in observable ways
4. Use a continuum of strategies to acknowledge appropriate behavior
5. Use a continuum of strategies to respond to inappropriate behavior

Classroom Management Practices (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008)

- High classroom structure (amount of teacher directed activity)
- Physical arrangement that minimizes distractions
- Post, teach, review, and provide feedback on expectation
- Rate of opportunities to respond (ORT)
- Response cards
- Direct instruction
- Computer assisted instruction
- Classwide peer tutoring
- Guided notes
- Specific and/or contingent praise
- Classwide group contingencies
- Behavioral contracting
- Error corrections
- Performance feedback
- Differential reinforcement
- Planned ignoring plus contingent praise and/or instruction of classroom rules
- Response cost
- Time out from reinforcement
Issues:
- Observation studies provide rich descriptions but no experimental control
- Most experimental studies are single subject in nature and typically address single components
- Assumption that combining effective individual components produces effective “packaged” universal management program

Objectives of Review
- Examine the effects of teachers’ universal classroom management practices to reduce disruptive, aggressive behavior
- Greater understanding of what teachers can expect with use of combined effective classroom management practices—“Bang for the Buck”
- What does it look like?

Research Questions
1. Do teachers’ universal classroom management practices reduce problem behavior in classroom with students in K-12?
2. What components make up the most effective and efficient classroom management programs?
3. Do differences exist between grade levels in effects and classroom management components?
4. Does treatment fidelity affect the outcomes observed?
Method

- Meta-analysis was used to systematically identify the magnitude and direction of effects across studies and to determine what particular features of studies contribute to these effects.

Definition

- "A collection of classroom procedures implemented by teachers in classroom settings with all students, for purposes of preventing and reducing inappropriate behavior as well as teaching prosocial behavior"
- Does not include social skills programs alone

Inclusion Criteria

1. The intervention must be delivered universally to all subjects. Pull-out or small group interventions (e.g., small group social skills) were not eligible.
2. Interventions that began treatment outside of the classroom and then transferred it into the classroom were not eligible.
3. Additional treatment components (e.g., parent training) were allowed provided there was at least one outcome variable measuring treatment effects with students.
Inclusion Criteria cont.

- Children in grades K-12
- General or special education setting
  - Residential or day treatment settings \textit{not} included
- Must have dependent measure of inappropriate student behavior in the classroom

Inclusion Criteria Cont.

- Experimental or quasi-experimental with control group
- Random assignment, matching, ANCOVA, or report pre-test—post-test data
- Post-test only, non-equivalent comparisons \textit{not} included
- Single subject studies NOT included

Search Procedures

- Database Search:
  - PsychoINFO, ERIC, Wilson Abstracts, Dissertation Abstracts etc.
- Terms used:
  - classroom management, classroom organization, classroom structure, behavior, outcomes, evaluation, effects, environment, climate, structure
- Author search:
  - Brophy, Evertson, Canter, Kounin, Kellam, van Lier
- Website search: \url{www.comp.org}
- Hand search:
  - Journal of Educational Psychology
  - Journal of Applied Developmental Psychology
  - Behavioral Disorders
Selection of Studies

- Initial search produced 5,134 titles
- 94 abstracts reviewed
- 25 selected and screened
- Screening reliability was conducted on 40% w/ Kappa=.524 (p=.098) with 80% average agreement.
- **14 studies** selected for final inclusion
- Coding protocol used to extract data w/ 84% point-by-point inter-rater agreement and discrepancies re-coded

Study Characteristics

- 71% regular classroom—29% combined
- 86% public school—14% combined
- 78% 11-50 wks duration
- 78% published in 80’s or 90’s
- 50% published in peer review journal
- 50% published as technical report
- 57% K-6 + resource—21% K-12

Classroom Organization and Management Program COMP

Evertson et al., 1988

- 9 Studies
  - Organizing the classroom
  - Planning and teaching rules and procedures
  - Managing student work and improving student accountability
  - Maintaining good student behavior
  - Planning and organizing
  - Conduction of instruction and maintaining momentum
  - Getting the year off to a good start
“Good Behavior Game”

- 3 Studies (Ialongo et al., 1993; Dolan et al., 1999; van Lier et al., 2004)
  - Group contingency used as universal classroom management
  - Class split into teams
  - Classroom rules
  - Reinforcement and consequences
- Ialongo et al. also had parent training component
- Dolan et al. had additional treatment group for Mastery Learning (not analyzed)

Multi-component

- 2 Studies
  - Proactive classroom management strategies (Hawkins et al., 1991)
    - Frequent use of encouragement and praise
    - ICPS social skills curriculum
    - Interactive teaching
    - Parent training
  - School, classroom and parent components (Gottfredson et al., 1993)
    - Teachers trained in classroom management based on Evertson’s work

Statistical Procedures

- Distributions analyzed and outliers Windsorized (Hedges & Olkin, 1985)
  - Sample size recoded to a less extreme value based on the 3 x IQR because inverse variance weight is affected by sample size
- Standard mean difference effect sizes calculated on dependent measures of disruptive, inappropriate, or aggressive student behavior in the classroom
- CMA and SPSS software used for the analysis
### Transformations of Data

9 COMP Studies

- **Aggregate effect sizes (classroom level)** were adjusted down to individual
  \[ ES_{\text{clusteradj}} = ES_{\text{sm}} \]

- **Standard error and variance of effect sizes** were adjusted for clustering of data using McHugh Cluster Calculator
  - ICC and sample size within clusters was used for weighted calculations
  - These adjusted SE and Variances were used in final ES calculations

### Pre-test Adjustments

- 2 studies reported pretest scores on posttest outcome measure
  \[ ES_{\text{pretestadj}} = \frac{(M_{\text{post}} - M_{\text{pre}}) - (M_{\text{postU}} - M_{\text{preU}})}{\sigma^2_{\text{post}}} \]
Adjustments Continued

- Non-clustered effect sizes (N=5) adjusted in CMA using *Hedges’ g* sample size adjustment
- Random effects standard error also calculated using CMA
- Weighting function used on all 14 effects sizes so one ES did not have a disproportionate influence on results based on reliability (a function of standard errors)

Main Effects Analysis

Random effects analysis on 14 effect sizes produced a statistically significant mean effect size of 0.25 (SE=0.05, z=5.07, p=.000)

- Sample of effect sizes ranged from 0.15 to 0.34
- Sensitivity analysis did not indicate any one study had a greater impact on results
- “Trim and fill” procedure indicated no publication bias
- Homogeneity analysis was statistically significant (Q = 23.97, df = 13, p = 0.03) with an I^2 of 45.77

Forest Plot of Effect Sizes

Homogeneity Analysis for a Fixed Effects Model: Q=8.71, df=2, p=0.13, and I^2=45.77
Moderator Analysis

- Treatment characteristics category was collapsed into Classroom Organization and Management Program (COMP) vs. Other
- Inverse variance weighted MetaF analysis produced a statistically significant mean effect size of .22 (p=0.00)
- Based on random effects analysis treatment characteristics explains a statistically significant amount of the difference in effect sizes between studies (Q=5.93, df=2, p=.019)

Table 1: Results of ES Weighted Meta F Analysis for Treatment Characteristic

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean ES</th>
<th>SE</th>
<th>-95% CI</th>
<th>+95% CI</th>
<th>z</th>
<th>P</th>
<th>k</th>
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</thead>
<tbody>
<tr>
<td>Other</td>
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<td>.05</td>
<td>.21</td>
<td>.41</td>
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<td>.000</td>
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<td>.05</td>
<td>.05</td>
<td>.24</td>
<td>2.89</td>
<td>.004</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Discussion

- Teachers’ universal classroom management practices have a positive effect on decreasing problem behavior in the classroom compared with standard classroom practices.
- Overall mean effect size of .25 can be interpreted to mean students in treatment group performed ¼ of a SD better than students in control group
- ~60% less problem behavior than control
Discussion Cont.

- Treatment characteristics had a significant impact on the overall mean effect size with COMP effect sizes smaller than other studies by approximately -.17.
- This could indicate weaker results from COMP or may be related to length of treatment since COMP studies tended to be shorter duration of treatment.

Discussion

- Lack of studies indicates we don’t know as much as we think we do about the effects of universal classroom management
- Effect of treatment needs to be considered as a comparison between “treatment as usual” rather than “no treatment”

Limitations

- Single subject data not included
- Studies with no student outcome data reported not included
- Lack of data to do additional moderator analyses (e.g., effects by grade level)
- Lack of treatment fidelity data reported in studies
- Missing studies?
Future Research

- Identification and recording of variables that may moderate effects
- Component analysis to determine what practices are most important for efficiency
- Treatment fidelity
- Pre-service and in-service teacher preparation

For More Information

Regina M. Oliver
regina.m.oliver@vanderbilt.edu