**SYSTEMATIC INTERVENTION CONSTRUCTION**

**by Simon Moss**

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| **Introduction** |

Many programs and treatments have been developed to address the most common problems in society—such as obesity, depression, and crime. Research has often been conducted to ascertain which of these programs or treatments are most effective. In contrast, the aim of systematic intervention construction is to blend these programs and treatments to uncover the most effective intervention possible. This approach is suitable whenever past researchers have proposed a range of practical implications to solve a single problem. This approach, for example could be applied to methodically develop a comprehensive intervention that is designed to

* alleviate a mental health problem, such as depression or anxiety
* improve the learning, engagement, or satisfaction of students
* encourage healthy behaviors, such as manage substance abuse or physical inactivity
* foster compliance, such as curb tax evasion or speeding
* enhance workplaces, such as diminish workplace bullying, rumors, or theft

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| **Overview of systematic intervention construction** |

In essence, to conduct systematic intervention construction, researchers extract, select, integrate, and carefully arrange the practical implications that past academics have proposed to solve a problem. Specifically, systematic intervention construction broadly comprises five distinct phases. The following table outlines these phases.

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| Phases | Possible activities |
| Collate publications that have proposed relevant practical implications | * To achieve this goal, enter relevant keywords into appropriate databases—or utilize other means—to identify suitable articles and books * Apply inclusion criteria and exclusion criteria to decide which of these publications to examine |
| Distil the features of programs or treatments the authors of these publications advocate | * Extract the practical implications the authors recommended in the discussion * Extract separable features of the programs or treatments the researchers evaluated |
| Retain the features that have been validated empirically | * Include only features that have been manipulated experimentally or examined in isolation of other features * Exclude features that did not significantly address the target problem |
| Combine similar features | * Blend features that overlap considerably—and perhaps entail similar activities—and thus could be applied more efficiently in unison |
| Arrange these blended features in a suitable order | * For example, features that are likely to improve the benefits of other features should be arranged earlier in the sequence |

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| **Systematic intervention construction** |

Systematic intervention construction could be utilised to resolve a range of problems, including substance abuse, limited productivity, tax evasion, and student disengagement. This approach, however, was first applied to integrate the psychological interventions and practices that researchers have developed to diminish weight (Moss et al., 2021). The following table outlines the methods these researchers applied to conduct the systematic intervention construction.

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| Phases | The methods that Moss et al applied |
| Collate publications that have proposed relevant practical implications | * Collated publications that have proposed relevant practical implications * Entered the keywords "weight loss" OR "weight-loss" into a database called PsycINFO—a database of most publications in psychology * Constrained this search to empirical refereed articles that were written in English * Excluded publications if the full text paper was unavailable * This procedure generated 1921 papers. |
| Distil the features of programs or treatments the authors of these publications advocate | * Extracted some of the features from the practical implications the authors wrote in the discussion section * Distilled other features from the programs or treatments the studies investigated * This procedure uncovered 243 features |
| Retain the features that have been validated empirically | * Included only features that have been experimentally manipulated or examined in isolation of other features * Excluded features that have not been shown in these studies to diminish BMI or adiposity * 119 features were retained |
| Combine similar features | * Two authors assigned a number to every pair of features, corresponding to the extent to which these features overlap. For example, features that comprise two of their six activities in common overlap 33% * Researchers then attempted to combine pairs of features in which the overlap exceeded 20% * 43 distinct blends of features were retained |
| Arrange these blended features in a suitable order | * For each pair of features, two authors ascertained whether the effect or consequence of one feature could enhance the utility or benefits of another feature * The researchers assigned a value to each feature, representing the number of times the effect or consequence of this feature is likely to enhance the utility or benefits of other features. * The researchers then arranged these features in order, from the highest numbers to lowest numbers on this value. * Features that inspire more immediate change also preceded features that evoke gradual change |

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| **Alternative practices** |

Because this technique has only recently been developed, nobody has identified the range of methods that researchers could apply to conduct systematic intervention construction more effectively. This section outlines some other methods or practices that researchers could utilise to complete the various phases. For other possibilities, contact [simon.moss@cdu.edu.au](mailto:simon.moss@cdu.edu.au) who has applied this technique several times, but yet to publish all these studies.

**Collate publications that have proposed relevant practical implications**

To identify suitable publications, researchers could apply a range of methods. For example

* rather than limit publications to specific keywords, researchers could instead limit publications to specific journals. For example, a researcher might decide to collate all the practical implications that authors have recommended in Nature, Science, or another journal
* researchers could apply a more comprehensive sequence of methods, such as the methods that scholars often use to conduct [systematic literature reviews](https://www.cdu.edu.au/files/2020-07/How%20to%20extract%20the%20relevant%20studies.docx)

**Retain the features that have been validated empirically**

Researchers could, in principle, apply an array of principles or criteria to decide which practical implications to retain. For instance, they might conduct a [Delphi study](https://www.cdu.edu.au/files/2020-07/Introduction%20to%20the%20Delphi%20method.docx) in which they seek the opinion of specialists in the field. They might reject all the features that specialists rate as tenuous or invalid.

**Combine similar features**

To blend similar features, researchers could again utilise a range of methods. For example, researchers could

* rate all the features on various attributes—such as the degree to which a feature revolves around individual, team, or family practices
* subject these features to a factor analysis, cluster analysis, or some other technique that identifies correlated or overlapping variables

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| **References** |

Moss, S. A., Serbetci, D., Alexi, N., & O'Brien K. (2021). The validated features of psychological interventions for weight loss: An integration. Behavioral Medicine