Instructional Planning Practices of Rural Multi-grade Teachers: A Case Study

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I. INTRODUCTION

Objectives

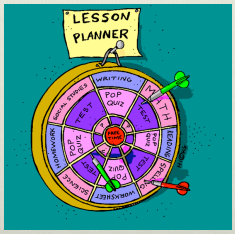
1. Evaluate long and short-term methods of instructional planning in four dimensions: goals, format, resources, and evaluation
2. Establish context within educational research on instructional planning
3. Apply knowledge of state content standards to develop effective student groupings
4. Develop practical strategies for efficient and organized instructional planning in multi-grade

Background

- lack of preparatory periods for planning additional administrative duties, and a shortage of resources contribute to the load of a multi-grade teacher (Harmon & Morton, 2010).
- majority of teacher education programs do not contain coursework designed for training teachers in multi-grade pedagogy (Mulryan-Kyne, 2007).
- Multi-grade classrooms used as an international model

Purpose

- **Purpose**: explore effective strategies used for instructional planning in multi-grade classrooms.



Research Questions

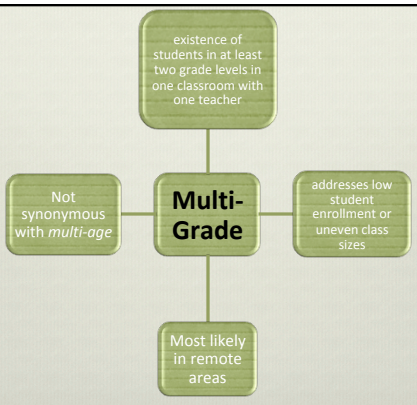
1. What methodologies do rural, multi-grade teachers use to plan for instruction?
2. How do multi-grade teachers organize student groupings and subjects when planning for instruction?

Significance

- Teachers engage in a thinking process while planning; the thoughts made during this time are usually a precursor to teacher behavior and action (Hall & Smith, 2006; Sardo Brown, 1988;Yinger, 1980)
- methods and strategies used by the participants could be applied by any educator aiming to plan for the unique needs of a diverse group of students

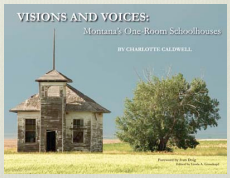
RESEARCH CONTEXT

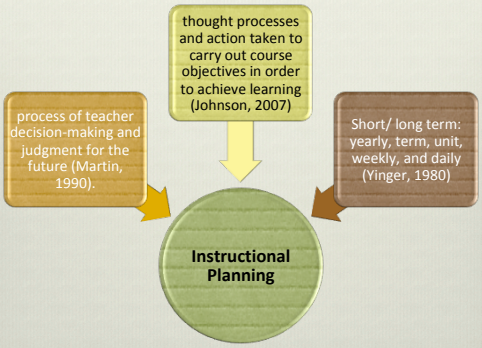
- Multi-grade Teaching
  - Prevalence of Multi-Grade
  - Multi-grade teaching in Montana
  - Preparation of teachers for Multi-grade teaching
- Instructional Planning: Models and Dimensions
- Curricular Integration
- Summary



Prevalence of Multi-Grade

- 190,000 one-room schools in 1919; just 400 in 2005
- 62 one-room schools in Montana; more than any state in the U.S.



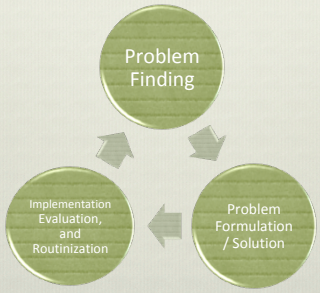


Planning Models

Linear	• Objectives-First (Tyler, 1950) • Backwards Design (Wiggins and McTighe, 1998)
Cyclical	• Process Model (Yinger, 1980)
Modern	• Danielson Framework (2003)

Which of the following instructional models matches your own planning style?

Yinger Process Model (1980)



Yinger Model, cont.

Planning Routines
Yinger, 1980

Activity Routines
- Established, fixed activities

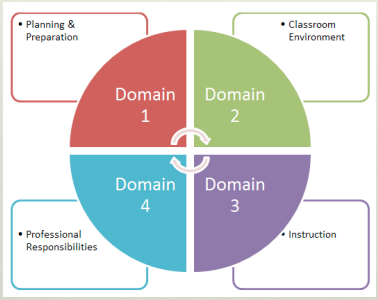
Instructional Routines
- Methods and Procedures established for questioning, monitoring, and giving instructions

Management Routines
- Procedures established by teacher to control and coordinate classroom behavior

Executive Planning Routines

established thought patterns when teacher is not teaching

Danielson Framework



Expert vs. Novice Planning

Study	Expert Teachers	Novice Teachers
Johnson (2007)	• Less detailed plans but more relevant to the curriculum	• **more detailed plans**, but less likely adapted to student need
Westerman (1991)	• More student-centered • More frequently connect new content with prior knowledge, and other subjects in the curriculum	• more rigid approach, stick to specific lesson objectives from **more structured lesson** plans.
Tsui (2003)	• Less likely to write objectives, but consider them mentally; instead consider materials and resources, students' interests and abilities	• More likely to use an objectives-first, linear model of planning

Importance of Instructional Planning

- Dodendorf (1983) found that students in rural schools performed on par with their urban peers, but success was highly dependent upon the teacher of the school to plan instruction that fostered cooperation, independence, and student motivation.
- Student achievement in multi-grade is more dependent upon the quality of the teaching rather than the grouping of grade levels (Mulryan-Kyne, 2007)

Multi-grade Instructional Planning

Study	Finding
Smith, 2016	• Multi-grade teachers have to **adapt curriculum documents** and materials designed for single-grade classrooms
Bandy, 1980	• most significant contributor to a multi-grade teacher's success was her **ability to plan and organize** instruction
Miller, 1991	• A key dimension of effective multi-grade teaching is **organization of instruction and curriculum** • multi-grade teachers rely on grouping practices to connect similar topics relevant across different grade levels
Vincent, 1999	• An environment that fosters self-directed learning is crucial to the multi-grade classroom
Anderson , 1996	• multi-grade teachers used individualized and small group instruction as the most prevalent planning strategy

Summary of Literature

- Previous studies on planning primarily address single-grade settings
- Bulk of more recent literature on planning reference foundational work of Tyler (1950) and Yinger (1980)
- While multi-grade classrooms in the United States are becoming less prevalent, they continue to be an international model for education, supporting a rationale for studying this population.

Participant Demographics

- Names of participants have been replaced with pseudonyms in this report in order to maintain confidentiality standards.
- Pseudonyms were generating using the most common first names for women and the most common surnames in the United States

Teacher Pseudonym	Total Years Teaching	Years Teaching Multi-grade	Current Number of Students	Current Grade Levels Taught
A: Mary Smith	30	20	5	K, 2, 3, 5, 8
B: Patricia Johnson	17	16	5	1, 4, 6
C: Linda Williams	6	6	7	4,5,7,8

Teacher Profiles

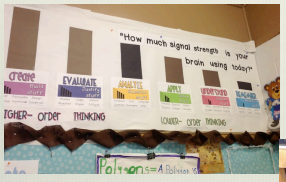
Teacher A: Ms. Smith

"If I want to spend the whole day on science I can. You have that ability. If lunch is going to be early or late, you don't have to worry about the cafeteria staff or the art teacher, music teacher, P.E. teacher…if I want my day to be backwards, it can be backwards!"

Teacher A: Ms. Smith

Teacher B: Ms. Johnson

Teacher B: Ms. Johnson



Teacher C: Ms. Williams

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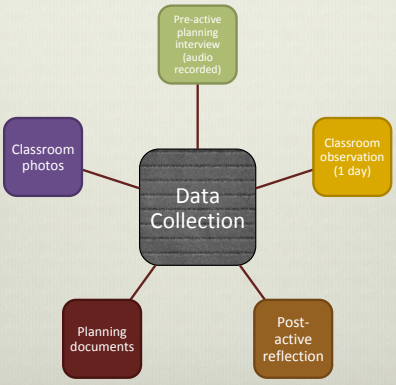
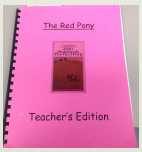


Resources Used



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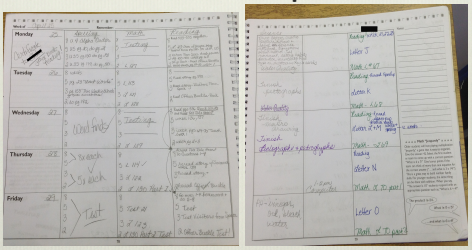
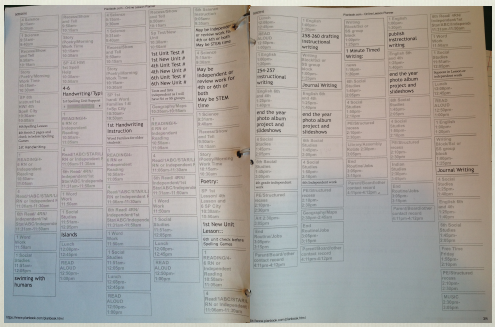
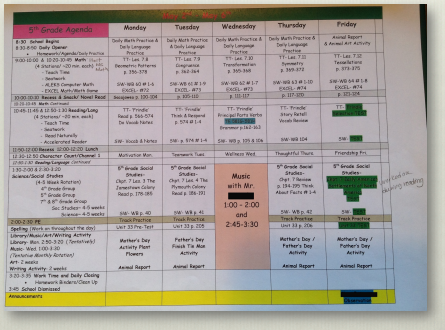
Ms. Smith's plans



Ms. Johnson's Plans



Ms. Williams' plans



Criteria for Judging Plan Effectiveness

Content coverage

- Included preparedness for high school (Ms. Williams)

Adherence to new state content standards

- Evaluated existing unit plans for grade-level rigor (Ms. Johnson)

Student Performance

- Formative (short-term) and summative assessments
- Included consideration of student behavior and engagement in unit (Ms. Smith)

Planning Routines

- Four Main types of routines from Yinger (1980)

Activity Routines

- Established, fixed activities

Instructional Routines

- Methods and Procedures established for questioning, monitoring, and giving instructions

Management Routines

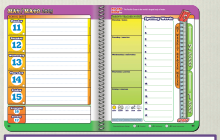
- Procedures established by teacher to control and coordinate classroom behavior

Executive Planning Routines

established thought patterns when teacher is not teaching

Classroom Jobs in Ms. Williams' Classroom

Color-coded by grade level assignment binders in Ms. Williams' classroom



Sample page of primary student planner used by Ms. Johnson

Ms. Williams' teaching station with grade-level crates and materials, math and reading rotation signs, and lesson plan book

Student easels with materials in Ms. Smith's classroom

Turn-in tray and classroom rules in Ms. Williams' room

Conclusions: Relation to Research Questions

Q1: What methodologies do rural, multi-grade teachers use to plan for instruction?	• Planning Dimensions • Recurrent Themes • Alignment to planning models
Q2. How do multi-grade teachers organize student groupings and subjects when planning for instruction?	• Student Groupings • Curricular Integration

Conclusions: Recurrent Themes

- Standards-Based Planning
- Prioritization of Planning Efforts
- Use of Competency-Based Learning
- Differences in Experience and Planning Method
- Importance of Routines

Conclusions: Planning Dimensions

Dimension of Planning	Conclusion
Goals of Planning	Content coverage was the primary goal; did not use an objectives-first model to do so
Resources for Planning	Student assessment data, textbooks, professional development, online resources, curriculum guides, place-based education, teacher-created resources, and student interests;
Format of Plans	• Long-term plans were less detailed and done mentally • Short-term plans varied by teacher, but were done in weekly format with lists of activities or topics • Adapted plans year to year

Conclusions: Student Groupings

- Rotation models for math and reading allowed for teachers to provide direct, grade-level specific instruction in math and reading
  - Ms. Williams had the most structure in this process, while Ms. Smith had the least
- Mixed grade-level grouping for a variety of subjects. allows for increased teacher contact time, and can be advantageous by encouraging cooperation
- Skills based concepts were easier to differentiate for teachers

Conclusions: Curricular Integration

- used frequently by the multi-grade teachers but in different ways
- More experienced teachers were more deliberate
- teachers' use of curricular integration to link topics across grade levels is consistent with previous research on multi-grade teachers' instructional practices (Miller, 1991; Vincent, 1999)
- By grouping subject areas, the teachers were able to establish constructs that students had to work together toward a common goal, as well as link their coursework to authentic learning experiences such as field trips, school performances or collaborative projects.

Implications

- Extend methodologies of multi-grade teachers to the broader population of to support differentiation
- Shift in how teacher education programs approach instructional planning
- The application of knowledge of students, including assessment data, could be emphasized in teacher education programs and professional development focused on planning methods
- direct instruction of organizational habits and strategies used by practicing teachers when planning could support future teachers

Implications, Cont.

- Lesson plan formats used as a bridge between the real world of teaching to the theoretical world
- Professional development: use of online plan books that contain databases of state and national standards
- Grade-level progressions in core subject areas can be used to facilitate student groupings, such as the NGSS CDI
- System of peer mentorship for multi-grade teachers

Research Summary

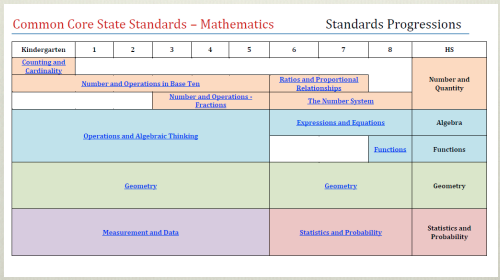
- professional demands of the rural multi-grade teachers necessitated intensive, reflective planning with a plethora of factors to consider
- Unique position facilitated autonomy in planning, including opportunities for authentic, student-centered experiences
- Relevance cannot be ignored due to the potential applications methods to global education development and single-grade classrooms with a wide range of student abilities

3. Application: Student Groupings across and within Content Standards

NGSS Grade Level Grouping

Example	Core Disciplinary Idea: ESS2.C: Role of Water on Earth's Surface Processes		
Grade	End of Grade 2	End of Grade 5	End of Grade 8
DCI	Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.	Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere.	Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land.
Student outcome	Develop a model to represent the shapes and kinds of land and bodies of water in an area.	Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth	Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity

Math: Grade Level Progressions



Math: Grade Level Progressions Example

Domain: Number and Operations in Base Ten		
Grade 3	Grade 4	Grade 5
3.NBT.1: Use place value understanding to round whole numbers to the nearest 10 or 100.	4.NBT.3: Use place value understanding to round multi-digit whole numbers to any place	5.NBT.4: Use place value understanding to round decimals to any place

ELA Anchor Standards

Language #1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking	
Grade	Related Standard
1	j. Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to prompts.
3	i. Produce simple, compound, and complex sentences.
5	a. Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences.
8	c. Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.

Curricular Integration

- purposeful connection of two or more subjects though activities

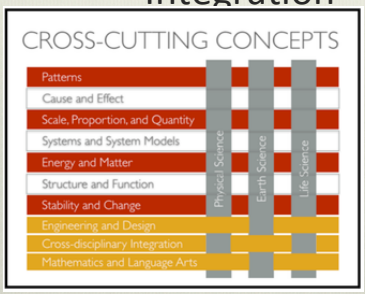
A pictograph mural created by Ms. Smith's students in anticipation of their field trip to Bear Gulch Pictographs near Lewistown.

Three Approaches to Curricular Integration

From Burns and Drake, 2004

Type	Description	Example(s)
Multidisciplinary integration	organizing standards from different disciplines around a common theme	service learning, theme-based units, and learning centers
Interdisciplinary integration	focuses on teaching skills such as literacy, research skills, and thinking skills, across different disciplines	identifying cause-effect relationships
Transdisciplinary integration	teachers plan the curriculum around student inquiries and concerns in real-life contexts	Project-based learning

Standards and Curricular Integration



Next Generation Science Standards

Standards and Curricular Integration

TABLE 4: Connections between the C3 Framework and the CCR Anchor Standards in the ELA/Literacy Common Core Standards

DIMENSION 1	ANCHOR STANDARDS	DIMENSION 2	ANCHOR STANDARDS	DIMENSION 3	ANCHOR STANDARDS	DIMENSION 4	ANCHOR STANDARDS
Developing Questions and Planning Inquiries	R1 W7 SL1	Civics Economics Geography History	R1-10 W7 SL1 L6	Gathering and Evaluating Sources Developing Claims and Using Evidence	R1-10 W1, 2, 7-10 SL1	Communi-cating and Critiquing Conclusions Taking Action	R1 W 1-8 SL1-6

Source:www.c3framework.org

4. **Practical Applications:** Instructional Practices

Reading Rotation

	8th	1st	3rd	5th
8:20-8:45	Meet with teacher		Non-fiction	Student Work
8:45-9:05	Student Work	Meet with teacher		Non-fiction
9:05-9:25	Non-fiction	Student Work	Meet with teacher	
9:25-9:45		Non-fiction	Student Work	Meet with teacher

Monday

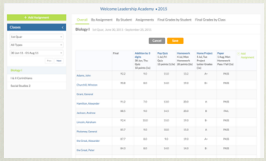
Math Centers

	1st	3rd	5th	8th
10:30-11:00		Student Work		
11:00-11:30			Student Work	
11:35-12:05	Student Work * Social Studies			Student Work

Monday

=math fact fluency (I-pad, Wrap-ups, flash cards)

Managing Grading and Assessment



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Progress made easy for RTI.

Classroom Organization

Classroom Organization

Classroom Organization

3rd Grade Weekly Agenda- Week of 10/17/16

Day/ Time	Monday	Tuesday	Wednesday	Thursday- No school	Friday- no School
8:00-8:20	Attendance, Flag, Pledge, Morning Work, Calendar/ Morning Meeting				
8:20-9:45	**Language Arts** 1. Nonfiction- Social Studies: Timeline Assignment 2. Success Maker 3. Teacher: Review Fact/Opinion, Selection vocab, Do p. 12-13 together 4. Student Work: Selection Test, 1; Spelling Page to prep for test	**Language Arts** 1. DEAR 2. Teacher: Teach Taking Notes/ Choosing what's important p. 16-17; preview project options 3. SW: Puffins Project choice 4. Success Maker	**Language Arts** 1. Teacher: Do p. 40-43, writing a research report; topic selection; question web (p. 44a-44b) 2. SW: Research report notes 3. Success Maker 4. Non-Fiction: Research Report	**Language Arts** 1. Student Work 2. D.E.A.R. 3. Success Maker 4. Teacher	**Language Arts** Selection test Read-Aloud: Strategy: Vocab:
9:45-10:10	**Spelling Test Review**	**Library**	**Spanish/ World Language: Weather Words**	**Music**	**Technology/ Classroom Guidance**
10:10-10:25	**Recess/ Morning Snack**				
10:30-12:05	**Math** 1. Student Work: Zearn. 2. Success Maker/ Fluency 3. Teacher 3.3 Multiply and divide with familiar facts using a letter to represent the unknown.	**Math** 1. Success Maker/ Front Row 2. Teacher: 3.4/3.5: Count by units of 6,7 to multiply and divide using number bonds to decompose. 3. Student Work: 3.4/3.5 Problem set	**Math** 1. Teacher: 3.7 Interpret the unknown in multiplication and division to model and solve problems using units of 6 and 7. 2. Student Work: 3.7 3. Success Maker/ Fluency HW: 2.6 Homework	**Math** 1. Writing work 2. Front Row 3. Success Maker	**Math** 1. Student Work 2. Success Maker/ Fluency 3. Teacher
12:05-12:40	**Recess/Lunch**				
12:40-12:55	**Whole-Class Read Aloud/ Guidance / Current Events**				

Discussion/Questions?