The Asphalt Forest: An Inner City Science Partnership

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Albright College

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The Asphalt Forest: An Environmental Science Education Initiative

Review of Literature

Christa Lauren Mantz

Our urban schooling areas are experiencing a large achievement gap compared to their suburban neighbors. With standardized tests scores becoming more important to schools, content areas are experiencing cuts in their curriculum. Children in schools, like the Reading School District, are lagging behind in performance on state assessments of mathematics and reading achievement. From grade 3 to grade 8, the Reading School District is on average 18 points behind in mathematics and 26 points behind in reading (based on the Pennsylvania aim score). The achievement gap is becoming more and more prevalent in our urban schools; it is starting in the elementary grades and widens as students progress to the middle and high school levels.

With an emphasis on meeting annual yearly progress, brought about by No Child Left Behind, urban schools are falling into a test-based curriculum. When we teach to the test, we are taking time out of regular instructional time. There are fewer opportunities for science, social studies and little chance for experiential learning when we are focusing solely on the tested subjects of mathematics and language arts. Urban children of poverty enter school with a vocabulary that is 30 million words lower than the average child in a professional or working class family which comes into school with around 45 million words (Hart & Risely, 2003). Eliminating content instruction and experiential learning only widens that gap of vocabulary knowledge. Government control, that started with Clinton's *Improving America's Schools Act*, followed by Bush's *No Child Left Behind Act* and currently *Race to the Top* from Obama, has not accomplished the goals it set out to achieve. All of these bills had one idea in mind- schools that

do not perform up to par on state standardized tests will be considered "failing" schools and risk losing funding or even worse closure. Instruction has been reduced to preparing for the test. We reduce the students' opportunities for creativity, problem solving and abstract thinking when we focus only on test preparation. Most standardized tests focus on reading, writing, and mathematics achievement. There is no doubt that reading and writing instruction carry a heavy load of importance, but completely doing away with science instruction in our urban school areas is not the answer to improve achievement.

The National Urban Alliance advocates a Pedagogy of Confidence for urban children. They realize that underachievement has become a norm in urban area schools; they propose that instruction based on active learning will lessen the achievement gap. Urban children are twice as likely to be living in poverty than their suburban neighbors (National Center for Education Statistics). The graduation rate from high school in the Reading School District is at 61%. In Reading, the mean household income is $24,682. Reading was named the poorest city in 2011 (City Data). Children of low socio-economic families have reduced resources and fewer opportunities for enriching experiences, resulting in gaps in the prior knowledge that supports reading comprehension. Coupled with weak vocabulary, urban children begin school lagging behind their peers. An effective urban curriculum must reduce those gaps – rather than making them worse.

To stop the growing achievement gap in our urban areas, effective urban instruction must be implemented. This instruction should acknowledge a student's culture rather than ignoring it. Content that is relevant and familiar to the students will help them connect, engage and learn. We need to build community outreach and advocacy to help support new instructional strategies and embrace an increasingly diverse student population program. We need to make students and the

community accountable for this improvement; teachers must also commit to closing the gap. Within the Pedagogy of Confidence, NUA suggests that creating a literacy-rich environment, connecting schools with home, community and culture will lessen the achievement gap.

Removing a sufficient amount of science instruction from urban schools is only hurting the children more- and more importantly not adequately equipping them for continuing their education. Key areas that the students and teachers need to focus on are prior knowledge, vocabulary, and concept development. Effective science instruction has the potential to help grow comprehension, provide concept building experiential activities, and make connections with the student's own community. Proper unit planning aligned with these goals can boost student achievement in urban areas.

Addressing urban education reform, the National Assessment of Educational Progress has been monitoring a trend labeled the "fourth grade slump" by teachers in the literacy field (Chall & Jacobs 2003). As students move forward grade levels instruction transitions from "learning to read" to "reading to learn." By fourth grade we expect students to be efficient decoders; reading to learn becomes the main objective. Content reading is the curricular focus.

When a student is beginning to learn to read, he or she is focusing mainly on fluency and efficient decoding. Once a student is a fluent reader, it does not necessarily mean that the student fully understands what he or she is reading. During the transition to "reading to learn," the texts become more complex and challenging (Guthrie, 2009). Students need a strong foundation of conceptual understandings and related vocabulary to navigate those texts. They also need to be able to think strategically about a wide range of academic subjects.

VOCABULARY

Jeanne Chall and Vicki Jacobs, authors of “Poor Children’s Fourth Grade Slump,” examined the skills and abilities of a low-income population to determine why some of the students meet the proper reading level and why others struggle. Participants in the 2 year study included 30 children in grade levels (2-6). The study implemented assessments of word recognition, word analysis, oral reading, word meaning, reading comprehension and spelling. One of the most influential findings in this study was that low income children in grades 2 and 3 achieved as well as the children in the normative population on all six sub-tests. The low income population of student’s test scores began to decline starting in fourth grade (Chall & Jacobs, 2003).

Measures suggested that the first to slip was word meaning. The low-income population had trouble grasping and defining more abstract, academic, literary and less common words. There could be a variety of reasons for this slip. Students from low-income areas are often subject to a more difficult family life or absence of appropriate family figures. A lack of engaging and growing language environments at home only decreases the chance for word development. The next aspect to decrease was their scores on word recognition and spelling and further up in grades 6 and 7 there became a decrease in oral reading and silent reading comprehension. So we cannot pinpoint a specific aspect of reading that needed more work, but instead it was the entire act of reading that decreased (Chall & Jacobs, 2003).

Students cannot understand the content of the text if they do not know the context. If children are lacking in one aspect of reading development then their later reading development is going to suffer. This study shows that those who have reading difficulties in the intermediate

grades will, most likely have serious trouble with the study of science, social studies, literature, mathematics and other content study that depends on written text. Since vocabulary instruction holds such a big part of the learning process, teachers must make sure that the students are given the opportunity, on a daily basis, to develop their vocabulary in the classroom. When a student is constantly using the academic vocabulary they will understand it further.

Betty Hart and Todd Risley (2003) also explored the connection between child's home environment and vocabulary development in students. They conducted a longitudal study of a diverse population of urban children at age 3. They found that children from professional families were exposed to a higher number of utterances and a wider range of different words than children from working class or welfare families. Children from higher socio-economic families had significantly larger vocabularies by the beginning of school.

The average child on welfare has half as much language experience per hour (616 words per hour) as the average working-class child (1,251 words per hour) and less than one-third that of the average child in a professional family (2,153 words per hour). These differences tell us that our urban areas with a high percentage of working class and welfare families need to have extensive vocabulary instruction (Hart & Risley, 2003).

Students who experience poverty may have reduced access to resources and experiences that help to foster academic language. Hart and Risely suggest that by age 4, children who live in poverty may have been exposed to 30 million fewer words than children from more economically advantaged homes. The student of lower socio-economic class will begin school with smaller vocabularies than students from higher socio-economic families. Background knowledge predicts achievement, so students who come to school knowing fewer words are less

likely to learn new words. This allows the achievement gap to persist through later grades (Spencer & Guillaume, 2009).

PRIOR KNOWLEDGE

Effective readers draw heavily on prior experiences when constructing understanding. The role of prior knowledge in reading relies heavily on the students and what they have previously learned in school and at home. If a student has no prior knowledge of a topic in the text they are reading, they will not understand what they are reading. Development of prior knowledge in the classroom can come from learning experiences, particularly during content instruction. Strategic thinking about text (making inferences and predictions) utilizes prior knowledge. When students have prior knowledge of a topic, they can more easily infer relationships and make connections. While reading the text, prior knowledge will help students to infer information based on what they already know. When students read to learn they connect new text information with their prior knowledge. This makes reading easier and more enjoyable. Knowing knowledge of a domain of information helps readers create mental models. Comprehension is enhanced (Hirsh, 2003).

Marjorie Lipson conducted a study on the correlation between prior knowledge and reading ability. The study was primarily focused with the children's ability to learn new information from text materials. The two between subject factors were reading ability and prior knowledge (Lipson 1982). With less prior knowledge, participants from urban low-income families had more trouble with implicit inference questions than they did with explicit text questions in the text. Therefore, the ongoing development of conceptual understandings that will enhance comprehension is critical in urban curricula. Science instruction, rich with experiential learning, had the potential to support that development.

John Guthrie writes about theories on motivation and comprehension by including stimulating tasks that encourage students to think on their own and be responsible for their own thinking. Especially for students in the middle level grades, reading comprehension and motivation can be huge predictors for achievement. Reading is integrated into every other subject. It is key to be able to comprehend what they are reading in relation to language arts, social studies, and science instruction. Engagement is an important factor that is going to influence every aspect of reading. When students are highly engaged, comprehension and learning are enhanced. John Guthrie's studies that focused on engagement identified instructional practices that optimized engagement. These practices include: 1) teaching strategic thinking, 2) supporting student autonomy and goal setting, 3) providing interesting texts, 4) facilitating social interactions related to reading, 5) maintaining warm relations between teachers and students, and 6) using experiential activities to spark interest (Guthrie, 2006).

Guthrie further explains these instructional procedures in his, "Influences of Stimulating Tasks on Reading Motivation and Comprehension" (2006). Appropriate goals developed with input gives the learner direction and vested interest in their learning. When students are interested in what they are reading they will begin to focus on gaining the meanings, building knowledge, and understanding more deeply. When the students can choose the texts they are reading, the tasks they perform, and their groups or partners during instruction it increases their motivation on the projects (Guthrie, 2006). Effective teachers must provide appropriate and stimulating texts at each individual child's level from which the children will choose. Educators can do this by providing different genres, building on the student's prior knowledge, and incorporating their interests. Guthrie's findings suggest mentoring students to implement

strategic thinking through inquiry units of study will build confidence and motivation (Guthrie 2006).

In "Children's Motivation for Reading and Reading Engagement" (1997) Allan Wigfield further described engagement. Engagement and motivation go hand in hand because you need to be engaged first and if you are not you are at the risk of not being motivated. Being a part of an activity does not mean that you are fully engaged in that activity, but just going through the motions. To become engaged in an activity, middle school students must feel that what they are doing has meaning to their careers as students. Wigfield suggests that subjective task values can help develop this motivational factor. The famous question, "Why?" comes to mind. Students want to know why they are doing this, why is it related to their learning, and what is it going to teach them learning. Tasks have three different values including interest value, attainment value, and utility value. Each serves its purpose in a different way: heightening the interest in the activity by the individual, the importance of the activity, and the usefulness of the activity (Wigfield 1997). Interest value is a high priority in middle school. Instruction should provide choices for students based on interest. Students should consider the attainment value of the text. Guthrie's studies would suggest that learning to think strategically will build the students' confidence that they can perform challenging tasks. Utility values are connected to the usefulness of the tasks. Therefore, instruction should make obvious connections for the students between learning and their futures.

Wigfield constantly brings up the question of "Do I want to succeed and why do I want to succeed?" This is a question that really hits home to many of our middle school students. The National Urban Alliance focuses on improving the student's community as a motivational approach. Urban adolescents would perceive such instruction as having high utility background.

We need to sell reading as something that is exciting and interesting because the majority of our students are going to be the toughest customers we will ever have. Anne Sweet, author of, "Teacher Perceptions of Student Motivation and Their Relation to Literacy Learning" depicted student motivation based on teacher's ideas. We want all of our students to become intrinsic learners. These learners are reading because they want to read and they enjoy it; these learners will choose books and read them during free time at school or at home. This continues their learning outside of the classroom which is one of our main goals in reading literacy. To optimize engagement teachers must plan learning that is relevant to students' lives, give them the chance to become successful in their learning, and build confidence and motivation that they can keep achieving higher levels in their reading literacy (Sweet 1998).

INTEGRATION

John Guthrie's studies on student engagement were conducted in the context of instruction that integrates science and literacy. Concept Oriented Reading Instruction (CORI) is an integrated science and language arts program based curriculum that focuses on motivation, fluency, content knowledge and reading comprehension. It focused on developing strategic thinking. The CORI program was implemented in fifth and sixth grade classrooms. This program was set in place for 12 weeks, 90 minutes a day. The participants were students who were below reading level and eligible to receive special education and students who were below grade level reading ability, but not eligible to receive special education (Guthrie, Klauda & Ho, 2013). This integrated curriculum produced a positive effect on reading comprehension, word recognition, and science content learning.

Another integrated model that was tested was IDEAS model (In-Depth Expanded Application of Science) (Romance & Vitale, 2001). During this science instruction model, students were being exposed to concepts of science as well as language arts skills. The IDEAS model connected learning activities such as concept mapping, reading strategy instruction, science activities, problem solving skills, application and writing workshop. With an integrated curriculum of science and language arts instruction we are holding the students accountable for higher order thinking that is appropriate for educational growth. They will be strengthening skills that are valuable for both science and language arts during this instruction. The CORI and IDEAS programs provide us with information on opportunities of experiential learning, motivation techniques, fluency, and content knowledge that have had positive effects on both science and reading (Upadhyay & Defranco, 2008).

Students will benefit from an integrated instruction of science and language arts. With an integrated curriculum from IDEA and CORI, the students can engage in developing a scientific literacy that has a strong connection to general literacy. This language arts and science setting can provide an effective framework for learning. Students will develop confidence in this setting. These positive gains can transfer to their home life and community.

CONCLUSION

Albright College and 13th & Union Elementary School, through a professional development school partnership, has proposed a framework for integrated science and language arts instruction to reduce the achievement gap. This framework was guided by four basic principles. 1) Science instruction should focus on building connected conceptual understandings through direct instruction and experiential activities. 2) The context of science instruction should provide opportunities for collaborative, meaning-focused, multi-dimensional vocabulary instruction. 3) Integrated science and language arts instruction should develop process strategies that enhance future science learning and content reading and writing. 4) Instruction engages students in scientific inquiry and problem-based study that makes connections to the students' community. Testing the framework, the 5th grade team of teachers at 13th and Union Elementary School is currently teaching a unit based on this framework. We have entered pre-test data and are waiting for post-test data to begin analysis.

THE SCIENCE INITIATIVE CONTINUES

During the 2014 school year, 13th and Union Elementary school distributed the pre-test of a Biome Unit created by Paige Dezzi. The test was taken by 6 fifth grade classrooms. After the tests were complete, we began to enter the test data for analysis. This data entry included assigning each student an itemized number, classroom teachers, test scores, and each question individually. Currently the Biome Unit is finished; we are now awaiting the post-test data to assess whether the science initiative was successful in these classrooms.

During the creation of the Biome Unit, we ordered multiple trade books for instruction. I used these trade books to create graphic organizers, writing assignments, and vocabulary activities. These items were used for instruction during the unit teaching and acted as an additional resource for the students.

Recently, members of the partnership team (Dr. Susan Seidenstricker, Paige Dezzi, and Kelly Detwieler) and I attended the Professional Development of Schools National Conference in Las Vegas, Nevada to share our research. We conducted a 90 minute presentation of our science initiative: The Asphalt Forest. Our presentation described the partnership process, curriculum building, current community projects, educational pilots, and future goals of our initiative. During this time we had the opportunity to attend presentations put on by other professional development schools, educators, and administrators. We gained numerous ideas for resources, projects and collaborations that we can implement into our partnership to make it continually successful. This is an ongoing project for Albright College and 13th and Union Elementary School that will continue to grow.

Students	Teacher	Gender	Pretest	Posttest	Question1F	Question2F	Question3F	Question4F
1.00	1.00	1.00	8.00	Pending	1.00	1.00	0.00	1.00
2.00	1.00	2.00	12.00	Pending	0.00	1.00	1.00	0.00
3.00	1.00	1.00	14.00	Pending	0.00	1.00	0.00	0.00
4.00	1.00	2.00	19.00	Pending	1.00	1.00	1.00	1.00
5.00	1.00	1.00	21.00	Pending	1.00	1.00	1.00	1.00
6.00	1.00	1.00	8.00	Pending	0.00	1.00	1.00	0.00
7.00	1.00	2.00	17.00	Pending	1.00	1.00	1.00	1.00
8.00	1.00	1.00	5.00	Pending	0.00	0.00	0.00	1.00
9.00	1.00	2.00	22.00	Pending	1.00	0.00	1.00	1.00
10.00	1.00	1.00	9.00	Pending	1.00	0.00	0.00	0.00
11.00	1.00	2.00	9.00	Pending	1.00	0.00	0.00	0.00
12.00	1.00	1.00	4.00	Pending	1.00	0.00	0.00	0.00
13.00	1.00	1.00	8.00	Pending	0.00	0.00	0.00	0.00
14.00	1.00	1.00	12.00	Pending	0.00	0.00	0.00	1.00
15.00	1.00	2.00	10.00	Pending	1.00	1.00	0.00	1.00
16.00	1.00	1.00	8.00	Pending	1.00	0.00	0.00	1.00
17.00	1.00	2.00	19.00	Pending	0.00	1.00	1.00	1.00
18.00	1.00	1.00	4.00	Pending	1.00	0.00	0.00	0.00
19.00	1.00	1.00	16.00	Pending	0.00	1.00	1.00	0.00
20.00	1.00	1.00	14.00	Pending	1.00	0.00	1.00	1.00
21.00	1.00	1.00	14.00	Pending	0.00	1.00	0.00	0.00
22.00	1.00	1.00	17.00	Pending	0.00	1.00	1.00	1.00
23.00	2.00	1.00	11.00	Pending	1.00	1.00	1.00	1.00
24.00	2.00	2.00	7.00	Pending	0.00	1.00	0.00	1.00
25.00	2.00	Pending	10.00	Pending	0.00	1.00	1.00	0.00
26.00	2.00	2.00	15.00	Pending	1.00	1.00	1.00	1.00
27.00	2.00	2.00	14.00	Pending	1.00	1.00	1.00	1.00
28.00	2.00	Pending	13.00	Pending	1.00	1.00	0.00	1.00
29.00	2.00	2.00	13.00	Pending	1.00	1.00	1.00	1.00
30.00	2.00	1.00	23.00	Pending	1.00	1.00	1.00	0.00
31.00	2.00	Pending	22.00	Pending	1.00	1.00	1.00	1.00
32.00	2.00	1.00	11.00	Pending	0.00	0.00	1.00	1.00
33.00	2.00	1.00	11.00	Pending	1.00	1.00	1.00	1.00
34.00	2.00	2.00	7.00	Pending	0.00	0.00	0.00	0.00
35.00	2.00	2.00	4.00	Pending	0.00	0.00	0.00	0.00
36.00	2.00	2.00	5.00	Pending	1.00	1.00	0.00	0.00
37.00	2.00	1.00	20.00	Pending	1.00	1.00	1.00	1.00
38.00	2.00	1.00	20.00	Pending	1.00	1.00	1.00	1.00
39.00	2.00	Pending	18.00	Pending	1.00	1.00	1.00	1.00
40.00	2.00	1.00	17.00	Pending	0.00	0.00	0.00	0.00
41.00	2.00	Pending	4.00	Pending	0.00	0.00	0.00	0.00
42.00	3.00	1.00	12.00	Pending	1.00	1.00	0.00	0.00
43.00	3.00	1.00	5.00	Pending	0.00	0.00	0.00	0.00
44.00	3.00	1.00	14.00	Pending	0.00	1.00	1.00	1.00
45.00	3.00	2.00	10.00	Pending	1.00	1.00	0.00	1.00
46.00	3.00	1.00	17.00	Pending	1.00	1.00	0.00	0.00

47.00	3.00	2.00	14.00	Pending	1.00	1.00	1.00	1.00
48.00	3.00	1.00	2.00	Pending	0.00	0.00	0.00	0.00
49.00	3.00	1.00	29.00	Pending	1.00	1.00	1.00	1.00
50.00	3.00	2.00	14.00	Pending	0.00	1.00	0.00	0.00
51.00	3.00	1.00	12.00	Pending	0.00	1.00	1.00	0.00
52.00	3.00	1.00	13.00	Pending	0.00	1.00	1.00	0.00
53.00	3.00	1.00	7.00	Pending	0.00	0.00	1.00	0.00
54.00	3.00	1.00	7.00	Pending	0.00	0.00	1.00	0.00
55.00	3.00	1.00	7.00	Pending	1.00	0.00	1.00	0.00
56.00	3.00	1.00	17.00	Pending	1.00	1.00	1.00	1.00
57.00	3.00	2.00	7.00	Pending	1.00	1.00	0.00	0.00
58.00	3.00	1.00	15.00	Pending	1.00	1.00	1.00	0.00
59.00	3.00	2.00	8.00	Pending	0.00	0.00	1.00	0.00
60.00	3.00	1.00	18.00	Pending	1.00	1.00	0.00	1.00
61.00	3.00	2.00	16.00	Pending	1.00	1.00	1.00	1.00
62.00	3.00	1.00	14.00	Pending	1.00	1.00	1.00	1.00
63.00	3.00	1.00	11.00	Pending	1.00	1.00	0.00	1.00
64.00	3.00	2.00	10.00	Pending	0.00	1.00	1.00	0.00
65.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
66.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
67.00	4.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
68.00	4.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
69.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
70.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
71.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
72.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
73.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
74.00	4.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
75.00	4.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
76.00	4.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending
77.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
78.00	4.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
79.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
80.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
81.00	4.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending
82.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
83.00	4.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
84.00	4.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
85.00	5.00	Pending	22.00	Pending	0.00	10.00	1.00	1.00
86.00	5.00	2.00	2.00	Pending	0.00	1.00	0.00	0.00
87.00	5.00	2.00	9.00	Pending	0.00	0.00	0.00	0.00
88.00	5.00	2.00	9.00	Pending	1.00	0.00	0.00	1.00
89.00	5.00	1.00	2.00	Pending	0.00	0.00	0.00	0.00
90.00	5.00	2.00	3.00	Pending	0.00	1.00	0.00	1.00
91.00	5.00	1.00	26.00	Pending	1.00	0.00	1.00	1.00
92.00	5.00	2.00	10.00	Pending	0.00	0.00	0.00	0.00
93.00	5.00	Pending	4.00	Pending	0.00	0.00	0.00	0.00

94.00	5.00	2.00	6.00	Pending	1.00	1.00	0.00	1.00
95.00	5.00	Pending	12.00	Pending	1.00	1.00	1.00	1.00
96.00	5.00	1.00	11.00	Pending	1.00	1.00	0.00	1.00
97.00	5.00	1.00	19.00	Pending	1.00	1.00	1.00	1.00
98.00	5.00	1.00	18.00	Pending	1.00	1.00	1.00	1.00
99.00	5.00	2.00	10.00	Pending	1.00	1.00	0.00	0.00
100.00	5.00	1.00	23.00	Pending	1.00	1.00	1.00	1.00
101.00	5.00	1.00	9.00	Pending	0.00	0.00	0.00	1.00
102.00	5.00	Pending	10.00	Pending	0.00	0.00	0.00	0.00
103.00	6.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
104.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
105.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
106.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
107.00	6.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending
108.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
109.00	6.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
110.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
111.00	6.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending
112.00	6.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending
113.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
114.00	6.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending
115.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
116.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
117.00	6.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
118.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
119.00	6.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending
120.00	6.00	1.00	Pending	Pending	Pending	Pending	Pending	Pending
121.00	6.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
122.00	6.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
123.00	6.00	2.00	Pending	Pending	Pending	Pending	Pending	Pending
124.00	6.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending
125.00	6.00	Pending	Pending	Pending	Pending	Pending	Pending	Pending

1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
1.00	1.00	1.00	2.00	0.00	4.00	0.00	1.00	1.00
1.00	0.00	1.00	0.00	0.00	4.00	1.00	1.00	0.00
1.00	1.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	1.00
1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00
1.00	1.00	1.00	0.00	1.00	4.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	1.00
1.00	1.00	0.00	0.00	1.00	4.00	0.00	0.00	0.00
0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	0.00
1.00	1.00	0.00	1.00	1.00	4.00	0.00	0.00	1.00
1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
1.00	1.00	1.00	1.00	0.00	4.00	0.00	0.00	1.00
0.00	0.00	0.00	1.00	0.00	4.00	0.00	0.00	0.00
0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
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Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00
0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00
0.00	1.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.00	1.00	3.00	1.00	4.00	1.00	0.00	0.00
1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
0.00	0.00	1.00	0.00	0.00	2.00	0.00	0.00	1.00
1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00
1.00	1.00	1.00	1.00	0.00	4.00	0.00	0.00	0.00
0.00	1.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00
1.00	1.00	1.00	0.00	0.00	4.00	1.00	0.00	1.00
0.00	0.00	0.00	1.00	0.00	2.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	4.00	0.00	1.00	0.00
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
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Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
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Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending

Question14	Question15	Question16	Question17	Question18	Question19	Question20	Question21	Question22
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	3.00	2.00	1.00	1.00
1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00
1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00
1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
1.00	0.00	0.00	0.00	1.00	2.00	2.00	1.00	0.00
1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
1.00	0.00	0.00	1.00	0.00	0.00	0.00	2.00	0.00
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00
1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	2.00
1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00
0.00	1.00	1.00	0.00	0.00	2.00	0.00	0.00	0.00
0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00	2.00	3.00	0.00	0.00
1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00

1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	1.00	1.00	0.00	3.00	2.00	2.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00
1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
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Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
0.00	0.00	1.00	1.00	1.00	1.00	3.00	1.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00
0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.00	0.00	1.00	1.00	0.00	2.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
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Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
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Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
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Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending

Question2:	Question24	Question25	Question26	Question27Pre
0.00	0.00	0.00	0.00	1.00
0.00	0.00	0.00	0.00	1.00
0.00	1.00	1.00	0.00	1.00
1.00	1.00	0.00	1.00	1.00
1.00	1.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00
0.00	0.00	0.00	0.00	0.00
1.00	1.00	1.00	0.00	1.00
1.00	0.00	0.00	0.00	1.00
0.00	0.00	0.00	0.00	1.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	1.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	1.00	1.00
1.00	1.00	1.00	1.00	0.00
1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	1.00	0.00
0.00	1.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00
1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	1.00	1.00
1.00	0.00	1.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00
1.00	0.00	0.00	0.00	0.00
1.00	1.00	1.00	1.00	1.00
1.00	0.00	0.00	0.00	0.00
1.00	0.00	1.00	0.00	0.00
0.00	1.00	0.00	0.00	1.00
0.00	0.00	0.00	0.00	1.00
1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	1.00
1.00	0.00	0.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00
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