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# Impact of fine arts participation on self-determination and locus of control among persons with developmental disabilities

(working paper)



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## **Table of Contents**

Abstract	.....	3
Executive Summary	.....	4
Introduction	.....	9
Study Design	.....	14
Results	.....	19
Discussion	.....	26
References	.....	28
Appendix	.....	30

## **Abstract**

In recent years, programs that enable people with disabilities to participate in the fine arts have been established around objectives of self-expression, social integration, and vocation, rather than therapeutic intent. While research has found various benefits to participation in such programs, little is known about the degree to which they promote among the participants feelings of self-determination and control over their circumstances. This preliminary study sought evidence of the degree to which self-determination and locus of control might be valuable constructs to study in relation to fine arts participation in adults with complex developmental disabilities. Thirty-four adult participants in fine arts programs and eight non-participants, all with developmental disabilities involving neuromuscular impairment and varying degrees of cognitive impairment completed the Adult Nowicki-Strickland Internal-External Scale and the Psychological Empowerment subscale of the ARC Self-Determination Scale. These quantitative measures did not find significant differences among high users, low users, or non-users of arts programming, nor was a significant correlation found between either of the two scales and number of months engaged in fine arts programming. Qualitative prompts, however, elicited narrative data that suggest that fine arts participants, relative to non-participants, are more likely to de-emphasize “luck” in favor of effort and ambition in attributions about their circumstances and accomplishments. The disparity between the results of the quantitative and qualitative components of the study might suggest that, if self-determination and locus of control do change as a result of artistic experience, the qualitative measures used here are better able to detect and reflect those changes than are the quantitative measures.

# **Impact of fine arts participation on Self-Determination and Locus of Control Among Persons with Developmental Disabilities**

**NEA Grant# 14-3800-7002**

## **Executive Summary**

In recent years, programs that enable people with disabilities to participate in the fine arts have been established around objectives of self-expression, social integration, and vocation, rather than therapeutic intent. While these facilitated arts programs might appear to share some characteristics of therapeutic arts programs, they assume little or none of the therapeutic structure, schema, or intent of art therapy. This is not to say that there are no therapeutic outcomes, only that therapeutic outcomes are not the primary goal of the activity.

One such program with a fine arts rather than an art therapy emphasis is the Arts Access Program at Matheny Medical and Educational Center in Peapack, NJ. Matheny is a special school, residential hospital, and outpatient care facility for people with medically complex, immobilizing disabilities associated with conditions such as cerebral palsy, Lesch-Nyhan disease and other significant developmental disorders. Its 22 year old Arts Access Program facilitates opportunities for people with disabilities to create and participate in the performing, literary and visual arts, and provides them exhibition and performance venues, publishing and sales opportunities, and other means of earning income and recognition for their work.



The Arts Access program's philosophies and strategies have been implemented by other organizations that share Matheny's mission of providing maximum opportunity for growth and social integration for people with developmental disabilities. Since 2007, one of these organizations has been Hattie Larlham Community Services in northeast Ohio. Hattie Larlham, like Matheny, serves people with complex developmental disabilities. Established in 1961, Hattie Larlham is a nonprofit organization that provides medical, residential, recreational and work training services to over 1,500 children and adults with developmental disabilities. The organization provides services to children and young adults at the Hattie Larlham Center for Children with Disabilities in Mantua, Ohio, and to adults at community-based homes throughout Ohio.

The Matheny and Hattie Larlham arts programs share an established method of art facilitation through which those participants who do not have full use of their limbs are enabled to create and perform. The "facilitators" (at Hattie Larlham, these individuals are dubbed "trackers") are professional working artists who serve as an impartial physical connection between the program participant and his or her medium. All artistic decisions are painstakingly elicited from the artist and faithfully executed by the facilitator.

Although fine arts programs like Arts Access and Hattie Larlham's Creative Arts Program were not developed as "therapies," therapeutic social, psychological, and functional benefits may accrue as a by-product of program participation. Indeed, research sponsored by VSA has found various benefits to participation in the arts by people with disabilities. Little is known, however, about the degree to which participation in the arts promotes feelings of self-determination and control over individuals' own circumstances.

Self-determination refers to the degree to which people feel a sense of self-efficacy—that they have input into, and are the ultimate determinants of, what happens to them. The related construct of "locus of control" is well established and well researched in social psychology. It refers to the extent to which one attributes his or her circumstances and outcomes to internal versus external causes. Although they are related constructs, self-determination and locus of control are indeed different. While locus of control is concerned with internal versus external attributions regarding the causes of one's circumstances, self-determination involves assessment of one's competence within a set of situations or circumstances.

This study was intended to provide evidence of whether or not sense of self-determination and locus of control are reasonable and valuable constructs to study in relation to fine arts participation in adults with complex developmental disabilities. The study included a pre-experimental quantitative component as well as a qualitative component. An arts participant group was comprised of 34 adults with developmental disabilities who participate in programming in the visual arts (i.e. painting, digital art,



sculpture, ceramics). The eight people in a non-arts participant group were individuals with similar disabilities to those in the arts participants group, who receive habilitative services at Matheny or Hattie Larlham but are not enrolled in a fine arts program. Because a vast majority of the individuals who have sufficient cognitive ability and both receptive and expressive communication to complete the tasks required in this project elect

to participate in the arts, particularly at Hattie Larlham, it was not possible to identify a non-arts participant group equivalent in size to the arts participant group.

For the quantitative component, participants in both groups were administered the following instruments: (1) the Psychological Empowerment subscale of the ARC's Self-Determination Scale [ARC-SDS(PE)] (Wehmeyer & Kelchner, 1995), and (2) the Adult Nowicki-Strickland Internal-External Control Scale (ANSIE)(Nowicki & Duke, 1974). All individuals had visual and/or upper limb neuromuscular impairments that prevented them from completing paper and pencil instruments. As such, instruments were administered verbally by members of the research team.

The ANSIE is a 40-item scale that asks the respondent to respond, yes or no, to questions such as, "Do you think that people can get their own way if they just keep trying?" and "Do you think it's better to be smart than to be lucky?" The ARC's Self-Determination Scale is a self-report measure designed for people with disabilities,

particularly those with mild cognitive deficit or learning disabilities. It was originally constructed to measure self-determination as an educational outcome among adolescents. In this study, we used only the 16-item Psychological Empowerment domain of the scale [ARC-SDS(PE)]. These items reflect respondents' beliefs about their abilities, their degree of control, and their expectations of success. Respondents are asked to indicate which of two options best describes them. For example, one item asks respondents to choose between, "I do not make good choices," and "I can make good choices."

For the qualitative component, open-ended questions addressed participants' perceptions of the role of arts participation in their lives, with a focus on eliciting information about the degree to which they feel that they have control over what happens to them whether within or outside the realm of the arts. A qualitative content analysis approach was employed in searching for meaning in the qualitative data. Data were coded into predetermined categories and those categories were revised or new categories added as the analysis progressed. Once the coding process was completed, differences in responses among participants based on level of participation in the arts (i.e. "high users", "low users", and non-arts participants) were examined.

Quantitative analyses did not provide evidence of an impact of fine arts participation on self-determination or locus of control among the study's participants. Analyses of differences between groups were conducted to determine whether differences exist among high-users of arts programming (i.e. more than one hour per week), low-users (i.e. one hour per week or less), and non-participants in the arts in scores on the two scales. No significant differences were found. Similarly, no significant correlation was found between scores on the two scales and the number of months for which arts participants had been engaged in fine arts programming.

While quantitative analyses of scores on the two scales did not identify significant differences between participants and non-participants, qualitative analyses of narrative data did suggest some interesting differences. Of particular interest, participants in the arts tended to de-emphasize "luck" in attributions about their accomplishments or life circumstances. When asked what has happened to them because of luck, they tended to cite lucky opportunities to invest effort or ambition (e.g. "I was lucky to have the arts program" or "I had the opportunity to help with Yankee Stadium accessibility") whereas



non-arts participants tended to cite lucky outcomes (e.g. “I won a contest.”) Arts participants also had a greater tendency than non-participants to cite achievements in creative and occupational areas, whether within or outside the fine arts, with some tendency for non-arts participants to cite achievements in the area of self-care.

Some participants felt that they had been “changed” through their participation in the arts. These individuals cited such things as increased creativity, greater happiness, and more life choices, as results of their assuming the role of “artist”

As a preliminary study intended to assess the value of self-determination and locus of control as variables of study, there were shortcomings that limit the interpretability of the data. Foremost is a small sample size, limiting confidence in the analyses of the data. The pre-experimental design limited our ability to understand any pre-existing differences between the groups that might have impacted in individuals’ responses to items in the instruments. Finally, given the degree to which many participants of this study have considerable cognitive impairment, expressive communication deficits, or issues of fatigue associated with their physical disabilities, the reliability of the data, particularly those obtained through the ANSIE and the ARC-SDS(PE) could be questioned.

It is possible that the quantitative measures of self-determination and of locus of control used in this study are not sufficiently sensitive to detect the change due to arts participation that seemed to be apparent in some of the qualitative responses. Those scales are intended to assess their respective constructs in a global fashion. They address broad attributional tendencies. It may be that the impacts of arts participation, rather than being reflected in a global way, are felt in more specific life domains: career outlook, sense of self-efficacy in communication, etc.

It might be that some of the differences observed, such as tendencies to respond in ways that de-emphasize luck in favor of effort and ambition, reflect pre-existing differences between the arts and non-arts participants not attributable to arts participation. In fact, it might be those differences that steered the arts participants toward the arts in the first place. As such, future research in which self-determination and locus of control are measured prior to engagement in the arts as well as after, to the extent that such research is possible, might help us understand the directionality of any relationship that is found.

## Introduction

Current estimates suggest that approximately 53 million people in the United States, roughly one in five persons, have some form of disability, and roughly one in eight have a significant impairment in mobility (Courtney-Long, Carroll, Zhang, Stevens, Griffin-Blake, Armour & Campbell, 2015). Estimates also suggest that roughly one in six children in the United States have one or more developmental disabilities, with that number rising (Boyle, Boulet, Schieve, Cohen, Blumberg, Yeargin-Allsopp, Visser & Kogan, 2011). Many of these individuals have impairments in physical and/or cognitive functioning that limit their opportunities to engage in vocational and recreational activities without some form of accommodation or facilitation.

In recent years, programs that enable people with disabilities to participate in the fine arts have been established around objectives of self-expression, social integration, and vocation, rather than therapeutic intent. The work of these artists is, at times, achieved and presented in the context of facilitated arts programs in collaboration with artists who do not have disabilities and who act as the arms and legs of the disabled artist. While these facilitated arts programs might appear to share some characteristics of therapeutic arts

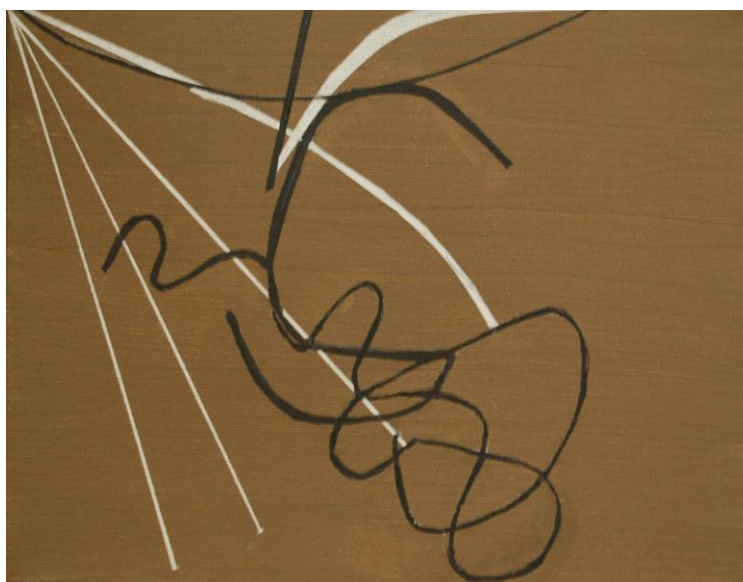


programs, they assume little or none of the therapeutic structure, schema, or intent of art therapy. This is not to say that there are no therapeutic outcomes, only that therapeutic outcomes are not the primary goal of the activity. Rather, the

activity serves to facilitate the artist's engagement in a human expressive activity, either in a recreational or vocational context, that otherwise might be foreclosed to him or her.

One such program with a fine arts rather than an art therapy emphasis is the Arts Access Program at Matheny Medical and Educational Center in Peapack, NJ. Matheny is a

special school, residential hospital, and outpatient care facility for people with medically complex, immobilizing disabilities associated with conditions such as cerebral palsy, Lesch-Nyhan disease and other significant developmental disorders. Its 22 year old Arts Access Program facilitates opportunities for people with disabilities to create and participate in the performing, literary and visual arts, and provides them exhibition and performance venues, publishing and sales opportunities, and other means of earning income and recognition for their work. The program aims to raise public awareness of the high-quality, professional work that its artists are creating, and to dispel false perceptions of what people with disabilities are capable of achieving. Arts Access began at Matheny with the challenge to create an art program for its patients to radically expand the opportunity for people with disabilities to realize their greatest creative potential, personal achievement and lifelong learning through the arts, and to have their creative talents recognized and enjoyed by the public. In November, 1993, Matheny instituted the program, offering classes in the visual and performing arts. As participants' work began to be seen and



evaluated on its own merits, the community responded favorably and galleries began regularly offering exhibitions in venues such as ABC World Headquarters in Manhattan, Rutgers University's Mason Gross School of the Arts, the gallery at Bristol-Myers Squibb, and other prestigious venues in the NY-NJ metropolitan area. The program has been highlighted in newspaper articles, magazines and television news programming, received state arts council support, and eventually expanded its reach beyond Matheny's walls.

The Arts Access program's philosophies and strategies have been implemented by other organizations that share Matheny's mission of providing maximum opportunity for growth and social integration for people with developmental disabilities. Since 2007, one of these organizations has been Hattie Larlham Community Services in northeast Ohio. Hattie

Larlham, like Matheny, serves people with complex developmental disabilities. Established in 1961, Hattie Larlham is a nonprofit organization that provides medical, residential, recreational and work training services to over 1,500 children and adults with developmental disabilities. The organization provides services to children and young adults at the Hattie Larlham Center for Children with Disabilities in Mantua, Ohio, and to adults at community-based homes throughout Ohio. Hattie Larlham's Creative Arts program shares the Arts Access program's philosophical basis and many of its strategies for facilitating the artistic process. Like Arts Access, Hattie Larlham's Creative Arts program focuses on a facilitation process in which each minute decision of the artist is elicited, acknowledged, and faithfully executed. As staff at Matheny's Arts Access program have had considerable contact with those at Hattie Larlham's program, the two programs might be seen as "close cousins".

Although fine arts programs like Arts Access and Hattie Larlham's Creative Arts Program were not developed as "therapies," therapeutic social, psychological, and functional benefits may accrue as a by-product of program participation. The impact of fine arts participation might even be greatest for individuals who have the most complex



developmental disabilities. Indeed, research sponsored by VSA (formerly known as Very Special Arts, and now a program of the John F. Kennedy Center for the Performing Arts) has found various benefits to participation in the arts by people with disabilities. In focus groups reporting on the impact of arts participation by children and adolescents in an educational

context, researchers found that teachers and artists-in-residence cited increased self-expression, improved impulsivity control, and enhanced critical thinking as changes they had seen in their students (Mason, Steedly & Thormann, 2008). Little is known, however,

about the degree to which participation in the arts promotes feelings of self-determination and control over their own circumstances.

Self-determination refers to the degree to which people feel a sense of self-efficacy—that they have input into, and are the ultimate determinants of, what happens to them. Specifically with regard to persons with intellectual and developmental disabilities, a wealth of research, particularly by that of Wehmeyer and colleagues, suggests that a strong sense of self-determination is associated with positive adult outcomes (Shogren, Wehmeyer, Palmer, Rifenburg & Little, 2015; Wehmeyer & Palmer, 1997; Wehmeyer & Schwartz, 1997) and that interventions can be crafted to enhance self-determination in children with disabilities

(Wehmeyer, Palmer, Shogren, Williams-Diehm & Soukup, 2013).

The related construct of “locus of control” is well-established and well-researched in social psychology, originating in the work of Julian Rotter (1966). It refers to the degree to which one believes that he or she controls the



consequences of his/her behavior. To the extent that one's locus of control is internally focused, the individual feels that he or she can exercise control over what happens to him or her. In contrast, to the extent that one's locus of control is externally focused, the individual believes that his or her circumstances are controlled from outside: by others, by luck or by random occurrence. While it is generally believed that one's internal versus external orientation with regard to sense of control is dispositional and stable over time, there is evidence that it might be somewhat malleable, able to be influenced by experience (Hans, 2000; Smith, 1970).

Although they are related constructs, self-determination and locus of control are indeed different. While locus of control is concerned with internal versus external attributions regarding the causes of one's circumstances, self-determination, like Bandura's

construct of self-efficacy (Bandura, 1997) involves assessment of one's competence within a set of situations or circumstances.

The relationship between participation in the arts and one's sense of self-determination and/or locus of control might be particularly important to study in the context of Matheny's Arts Access Program or Hattie Larlham's Creative Arts Program, whose primary programmatic basis is an established method of art facilitation through which those participants who do not have full use of their limbs are enabled to create and perform. The "facilitators" (at Hattie Larlham, these individuals are dubbed "trackers") are professional working artists who serve as an impartial physical connection between the program participant and his or her medium. Extensively trained to abstain from any influence on the creative process, the facilitator follows the artist participant's detailed directions in applying paint to canvas, pixel to screen, knife to sculpture medium, movement to choreographed dance. All artistic decisions are painstakingly elicited from the artist and faithfully executed by the facilitator.

In effect, individuals with limited or no verbal communication and little or no control over their limbs, are engaged in an unusual opportunity to manipulate their environment. They experience what might be, for them, an unusual opportunity to express themselves through their work and to impact favorably on others' perceptions of them and of their abilities.

The facilitation process, when adhered to faithfully, is one that respects all artistic choices and vision of the artist, and hence, ensures the artistic "ownership" of the product.

*This study is intended to provide evidence of whether or not sense of self-determination and locus of control are reasonable and valuable constructs to study in relation to fine arts participation in adults with complex developmental disabilities.*

An earlier survey study of Arts Access participants at Matheny found that they felt total artistic ownership over their pieces. We do not know, however, whether their participation in the facilitation process is related to a broader sense of self-efficacy and an internally oriented locus of control in life contexts beyond the art studio. Given the pains taken by program staff to ensure the integrity of the facilitation process, and given the sense of accomplishment the artists express

when their pieces are displayed publicly or sold, our suspicion is that they experience considerable sense of self-determination that does carry beyond the context of the arts program.

The limitations of the present work do not allow it to provide definitive information regarding the impact of fine arts participation on sense of self-determination and locus of control among individuals with developmental disabilities. Rather, this study is intended to provide evidence of whether or not sense of self-determination and locus of control are reasonable and valuable constructs to study in relation to fine arts participation in adults with complex developmental disabilities.

### **Study Design**

Prior to the study's commencement, the research protocol, consent forms, and assent forms were reviewed by the research review committee at the Matheny Medical and Educational Center, the Hattie Larlham Human Rights Committee, the Institutional Review Board for Human Investigation at Akron Children's Hospital, and the Interdisciplinary Research Committee of the New Jersey Division of Developmental Disabilities.

Quantitative component. A quantitative research component of the project involved a static group comparison. While standard research terminology for such designs refers to a "treatment group" and a "comparison group", we refrain from using that terminology here only because of the connotations that such terms evoke. As noted earlier, the programs studied were developed with a conscious eye toward differentiating themselves from art therapy programs. We wish to respect that philosophical and methodological distinction and, thus, refer to the group of individuals who are engaged in the arts programs as "arts participants" and those in the comparison group as "non-arts participants".

The arts participants group was comprised of 34 adults with developmental disabilities who participate in programming in the visual arts (i.e. painting, digital art, sculpture, pottery) in Matheny's Arts Access Program or in Hattie Larlham Creative Arts program. The eight people in the non-arts participants group were individuals with similar disabilities to those in the arts participants group, who receive habilitative services at

Matheny or Hattie Larlham but are not enrolled in a fine arts program. Because a vast majority of the individuals who have sufficient cognitive ability and both receptive and expressive communication to complete the tasks required in this project elect to participate in the arts, particularly at Hattie Larlham, it was not possible to identify a non-arts participant group equivalent in size to the arts participant group. Due to the nature of the facilities where these programs reside, all of the study participants had disabilities that include a strong physical component (cerebral palsy or a related disabling neuromuscular condition) and varying levels of cognitive functioning.

Specific inclusion criteria for the arts participant group were as follows: (1) participants were at least 18 years of age; (2) they had a documented developmental disability, e.g., a physical, cognitive, or socio-emotional disability that manifests before the age of 18; (3) they received habilitative services from one of the participating agencies at the time of the study; (4) they evidenced cognitive ability and sufficient expressive communication ability to allow the completion of the study's measurement instruments (i.e., within the normal to moderate impairment range on a standardized measure of cognitive function or, in the absence of such documentation, judgment of the habilitation organization's psychology or social services staff of sufficient cognitive ability); (5) they were currently enrolled in Matheny's Arts Access program or Hattie Larlham Creative Arts Program at the time of the study and had been active participants in fine arts programming, whether solely in the Arts Access program or in a combination of the Arts Access program and another similar program, for at least three of the preceding 12 months. Inclusion criteria for the non-arts participant group were the same, except that they were not current participants in Matheny's Arts Access program or Hattie Larlham Creative Arts. Further, candidates for the non-arts participant group were excluded if they had participated in any formal fine arts program within the preceding two years.

It should be noted that while the arts participation group is comprised of individuals who participate in the visual arts, some individuals in that group also engage in artistic endeavors outside the visual arts, such as writing, poetry, dance, choreography, or music. Sufficient data concerning their level of participation in these activities were not available to allow us to study the role of participation in the performing or literary arts as a covariate.



Participants in both groups were administered the following instruments: (1) the Psychological Empowerment subscale of the ARC's Self-Determination Scale [ARC-SDS(PE)] (Wehmeyer & Kelchner, 1995), and (2) the Adult Nowicki-Strickland Internal-External Control Scale (Nowicki & Duke, 1974). The order of the administration of the scales was counter-balanced across participants to counter any ordering effects. All individuals had visual and/or upper limb neuromuscular impairments that prevented them from completing paper and pencil instruments. As such, instruments were administered verbally by members of the research team

At Matheny, scales were administered by the Principal Investigator (Robey), co-Investigator (Wilkenfeld), or research assistant (DeVone). At Hattie Larlham, given participants' considerable difficulties in expressive communication, Creative Arts staff (who are believed to be the most experienced and skilled among Hattie Larlham's staff in eliciting responses from individuals at their facility who are fully nonverbal) were trained in administering the scales.

The Scales. The Adult Nowicki-Strickland Internal-External Control Scale (ANSIE) (Nowicki & Duke, 1974) was developed to address shortcomings in Rotter's Internal-External Control Scale (Rotter, 1966), an early and widely used measure of locus of control. Age-specific versions (children, adults, and seniors) of the Nowicki and Strickland instrument have been developed. This study employed the adult version. The 40-item scale asks the respondent to respond, yes or no, to questions such as, "Do you think that people can get their own way if they just keep trying?" and "Do you think it's better to be smart than to be lucky?" A wide body of literature attests to strong psychometric value for the scale. Concurrent validity is satisfactory, correlating significantly with other measures of locus of control and with a range of theoretically relevant behaviors. Social desirability factors do not seem to reduce the scale's usefulness. The ANSIE lends itself quite well to the research question in that it directly targets those cognitions that reflect one's sense of internal versus external control over their circumstances. The scale is scored in the direction of externality. As such, low scores indicate that the person perceives that things that happen to them are largely due to their own actions.

The ARC's Self-Determination Scale is a self-report measure designed for people with disabilities, particularly those with mild cognitive deficit or learning disabilities. It was

originally constructed to measure self-determination as an educational outcome among adolescents. The full scale consists of multiple domains yielding separate sub-scores. With regard to construct validity, the ARC-SDS is able to discriminate among groups based on gender and age in areas where those differences would theoretically make sense, and factor analyses demonstrate that the scale measures those constructs that it intends to measure. In this study, we used only the 16-item Psychological Empowerment domain of the scale [ARC-SDS(PE)]. These items reflect respondents' beliefs about their abilities, their degree of control, and their expectations of success. Respondents are asked to indicate which of two options best describes them. For example, one item asks respondents to choose between, "I do not make good choices," and "I can make good choices." Another asks the respondent to choose between, "I usually agree with people when they tell me I can't do something," and "I tell people when I think I can do something that they tell me I can't." Inter-item and item-total correlations specifically for the Psychological Empowerment domain suggest strong internal validity for that subscale (Wehmeyer, 1995). Raw scores can be converted into percentile scores for comparison with sample norms, although the main interest here is in comparing the scores of individuals in the participant and non-participant groups, and to examine correlations with participation history measures. Also, with the scale having been normed using an adolescent population, the value of our comparison of scores with sample norms would be of questionable value with our adult sample.

Limitations posed by the quantitative data sources. While the ARC-SDS was developed specifically for use with people with developmental disability, the ANSIE was not. It has not been adequately tested for use with individuals who have cognitive deficit. One validation study for the ARC-SDS, however, provides evidence of moderate to high correlation between the two measures, suggesting that the ANSIE should be a useful measure with this population. We did find that some individuals who we had recruited did not understand the items or appeared to be responding unreliably. Data for those individuals were not included in the study.

Qualitative component. The quantitative findings of the study were complemented by a qualitative component. Individuals in the arts participants and non-participants groups were interviewed using a semi-structured interview protocol. The intent of the

interviews was to elicit participants' personal narratives, from which the investigators could derive insights. Questions addressed participants' perceptions of the role of arts participation in their lives, with a focus on eliciting information about the degree to which they feel that they have control over what happens to them whether within or outside the realm of the arts. For each individual, the qualitative interview was conducted after all quantitative data were gathered so that scale scores would not be impacted by the participant's reflections during the qualitative component. Interviewers took detailed notes on responses, generally reflecting the responses verbatim. As some participants were fully nonverbal, their responses were expressed through electronic or manual communication devices. The participants at the Hattie Larlham Creative Arts program generally have more complex cognitive and physical impairments than those at Matheny and did not have access to, or facility with, the types of augmentative communication devices that might facilitate long or complex narrative responses. Therefore, they did not respond to the first several qualitative prompts as they required more complex responses.

A qualitative content analysis approach was employed in searching for meaning in the qualitative data. Qualitative content analysis has been described as "a research method for subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005). Unlike some frameworks for analysis of qualitative data, qualitative content analysis is suitable for inductive or deductive approaches or for a combination of the two (Mayring, 2000). An inductive approach is generally used when prior knowledge or theoretical guidance is limited, so coding and categorization strategies evolve as the data are examined. A deductive approach is used when there is some prior knowledge or theory to guide the construction of an initial set of codes *a priori*, although those codes can be revised as the coding process progresses. As some expectations of appropriate categories into which data would be coded existed prior to the examination of the data, a deductive approach was employed for this study. Data were coded into predetermined categories and those categories were revised or new categories added as the analysis progressed. Once the coding process was completed, differences in responses among participants based on level of participation in the arts (i.e. "high users", "low users", and non-arts participants) were examined.

## Results

### Quantitative Results

Quantitative analyses were performed using the SPSS statistical package, Version 22 (IBM Corp., 2013). These analyses, summarized in Table 1 in the appendix to this report, did not provide evidence of an impact of fine arts participation on self-determination or locus of control among the study's participants. A discussion of the study's limitations that should be considered in interpreting these findings is included in the Discussion section of this report.

Relationship between ANSIE scores and ARC-SDS(PE) scores. Lower scores on the ANSIE reflect more internal locus of control, while higher scores on the ARC-SDS(PE) reflect greater self-determination. As such, given the conceptual similarity between the two constructs measured by the instruments, ANSIE Scores and the ARC-SDS(PE) scores were expected to be inversely related. This negative correlation was confirmed ( $n=42$ ,  $r = -0.638$ ,  $p<.001$ ), lending some support for the concurrent validity of the measures when used with this rather compromised population.

Between groups differences based on level of participation. A Kruskal-Wallis analysis was conducted to determine whether significant differences exist among the mean ranks for the ANSIE scores or for the ARC-SDS(PE) scores of high-users of arts programming (i.e. those participating more than an average of one hour per week), low-users of arts programming (i.e. those participating an average of one hour per week or less), and non-participants in the arts. A nonparametric test of homogeneity of variance confirmed that the data for each of the scales satisfy that assumption. The omnibus Chi-Square statistic resulting from the Kruskal-Wallis analysis was not statistically significant for the ANSIE scores ( $H=.123$ ,  $p=ns$ ) or for the ARC-SDS scores ( $H=.731$ ,  $p=ns$ ). The mean ranks for ANSIE scores for the three groups were 18.50 ( $n=11$ ), 15.36 ( $n=14$ ) and 17.81 ( $n=8$ ) respectively, and the mean ranks for the ARC-SDS(PE) scores for the three groups were 17.64 ( $n=11$ ), 17.04 ( $n=14$ ), and 16.06 ( $n=8$ ) respectively

Relationship between hours per week visual arts programming and scores. Arts program staff at the two facilities were asked to provide information on the average

number of hours each of the study's participants had been engaged in formal visual arts programming in the preceding three months. The rank order correlations between those data and scores on the two scales were assessed. The number of hours of visual arts engagement per week was not significantly correlated with ANSIE scores ( $r=0.009$ ,  $p=ns$ ), nor was it significantly correlated with ARC-SDS(PE) scores ( $r=-0.126$ ,  $p=ns$ ).

### **Qualitative Results**

The unit of analysis for the qualitative data was individuals' responses to each of six open-ended prompts, one of which was broken down into two sub-prompts. Three of the qualitative prompts concerned luck, self-efficacy, and goals for the future. These three prompts were administered with all study participants at Matheny. (As noted earlier, the level of cognitive and expressive communication disability of the participants at Hattie Larlham rendered these three prompts inappropriate for those individuals.) The remaining three prompts were specific to feelings about engagement in the arts and ones perceptions of self as an artist and were intended only for the arts participants.

As the analytic approach used was a deductive one, qualitative responses were coded into categories that were largely constructed *a priori*. Consonant with most applications of qualitative content analysis, this pre-constructed scheme of categories was flexible with category names adjusted and new categories added as the analysis progressed. Also consonant with most applications of qualitative content analysis, the categories into which responses were coded are mutually exclusive. A single response was coded only into a single category. The prompts and the categories into which the items were sorted, both initial and added, are provided below. Breakdowns of the numbers of responses sorted into each category by arts participants deemed "low users" (one hour of arts programming per week or less), "high users" (more than one hour of arts programming per week), or "non-users" (individuals in the comparison group – those who do not participate in art programming) are presented in an appendix to this report. It must be recognized, however, that the small number of participants in the study, particularly those in the comparison group, make comparisons based on these breakdowns somewhat tentative.

The initial coding was performed by the first Principal Investigator (K.R.). Subsequently and in a separate blind process, all responses were again coded into the final

coding scheme by the Research Assistant (J.D.). Responses for which there was disagreement in coding were revisited and discussed between the two coders until agreement was reached. Because of impairments in expressive communication of most participants (most use some type of augmentative/assistive communication device), narrative responses to these prompts were brief, in many cases just 3 words or fewer.

Prompt #1: *Do you know what I mean when I say “luck” or that someone is “lucky”? Sometimes people feel like what happens to them is because of luck, and sometimes people feel like what happens to them is because they’ve worked at it and made it happen. What kinds of things do you think happen to you because of luck?*

Eighteen individuals, 13 arts participants and five non-participants, at Matheny responded to this item. Responses were sorted into two categories that were constructed *a priori*: (1) those that reflect “opportunities” that arose due to luck; and those that reflect “outcomes” that arose through luck. In the course of analysis, two additional categories were identified: (3) responses that reflect the intervention of a higher power; and (4) those that reflect a lack of belief in luck. Response breakdowns by category are presented in Table 2.

Interestingly, while a majority (7 of 13) of art participants gave responses that reflect lucky *opportunities* to accomplish something, only 1 of the 5 non-art participants cited such opportunities. Rather, a majority of non-art participants (3 of 5) gave responses that reflect lucky *outcomes*. The art participants were more likely to respond with things like, “I was lucky to have the arts program,” or “I had the opportunity to help with Yankee Stadium accessibility.”

One individual stated, “When I finish a poem or piece of art, it’s work and luck together. It’s luck that I got the opportunity.” The non-art participants were more likely to cite lucky outcomes rather than opportunities, recalling, “I was lucky surviving a recent car accident,” or “I won a contest – received tickets for a vacation.” Only two individuals, both relatively low users of arts programming, indicated that they don’t believe in luck, and one non-arts participant said that he believes in faith rather than luck.

*“When I finish a poem or piece of art, it’s work and luck together. It’s luck that I got the opportunity.”*

Prompt#2: *Tell me about something that you made happen. What do you think you did to make that happen?*

Twenty individuals, twelve arts participants and 8 non-participants at Matheny, responded to this item. Responses to this prompt were sorted into nine categories, four of which were constructed *a priori*, and five that were added in the course of analysis. Four of the nine categories are “extra-institutional” in locus (i.e. categories that reflect activities beyond the walls and scope of the institution or organization). These categories are: (1) responses that reflect progress toward occupational and/or financial independence; (2) responses that concern family or relationships; (3) responses that concern recreation or sports (added during analysis) and (4) responses that concern a socially conscious act (added during analysis). Five of the nine categories are “intra-institutional” in locus (i.e. categories that reflect activities within the context of the service providing organization). These categories are: (1) responses that reflect progress toward occupational/financial independence within the context of the Matheny’s services; (2) responses that concern recreational/sports activities; (3) responses that reflect scholastic accomplishment (added during analysis); (4) categories that concern daily functioning or self-care (added during analysis); and (5) responses that reflect creative/artistic work outside an occupational context (added during analysis). Response breakdowns by category are presented in Table 3.

The category into which the highest number of responses was coded, both for art participants and non-participants, was the intra-institutional category of daily functioning and self care activities. Given the high degree of care needs of this population, it is not surprising that achievements in the area of self-care might be at the fore in the minds of these individuals. Responses such as, “I drove a power wheelchair,” “Wound healing – I listened to the medical staff and followed their directions to heal my wounds,” and “I have ADL’s (activities of daily living) – I direct these tasks” were common. Four of eight of those who do not participate in the arts and three low users of 12 arts participants responded in this manner.

Four of the 12 arts participants cited achievements in the extra-institutional area of occupational/financial independence, with only one of the eight non-arts participants citing

achievements in that area. A similar pattern was seen for the category of responses concerning creative work without stated occupational or recreational intent.

In general, responses to this prompt seem to show some tendency toward arts participants citing achievements in creative and occupational areas, with some tendency for non-arts participants to cite achievements in the area of self-care.

Prompt #3: *Thinking about the future, are there things that you want to accomplish? Tell me about them.*

Eighteen individuals, 11 arts participants and seven non-participants at Matheny, responded to this item. Responses to this item were sorted into five categories, 3 extra-institutional and two intra-institutional. All were constructed *a priori*. The extra-institutional categories are: (1) responses reflecting ambitions toward occupational/financial independence; (2) responses reflecting desired recreational/sports accomplishments; and (3) responses reflecting ambitions regarding family and relationships. The intra-institutional categories are: (1) responses reflecting occupational ambitions in the context of the service provider (Matheny); and (2) recreational ambitions within the context of the service provider. Response breakdowns by category are presented in Table 4.

None of the study participants cited goals in the two intra-institutional categories. Both art participants and non-participants expressed that they want to accomplish things related to occupational or financial independence. Some individuals cited specific desired occupations (e.g. the ministry; President of the United States; owner of a limousine service), while others were more general (e.g. being able to survive in the real world; move out and have my own place to live). One said, "I want to show people I'm capable of living on my own, not a sheltered life . . . managing my finances, buy things for my apartment . . . to be a fully responsible adult." Two of the participants in arts programming cited occupational goals specifically related to their art work. One, for example, indicated that she wants to get a painting sold, as well as sell a book she had written. Another wants to write a book about her life as an artist. These individuals found their participation in the arts to have opened occupational options.

Prompts #4a and #4b: *I'd like to talk with you about a recent piece (painting, sculpture, etc.) that you've done. Can you think of one that is important to you? I'd like to*



know what it was like for you when you were working on that piece. (#4a) How did you feel when it was finished? (#4b) Response breakdowns by category for prompt #4a are presented in Table 5, and response breakdowns by category for prompt #4b are presented in Table 6.

Twenty-eight individuals, 14 arts participants at Matheny and 14 at Hattie Larlham responded to this pair of prompts. Three categories, all constructed *a priori*, were used in sorting the responses: (1) responses concerning pleasant feelings; (2) responses concerning feelings of self-affirmation; and (3) responses reflecting unpleasant feelings. A large majority of responses for both high and low-users of arts programming were coded into the first category, that of responses concerning pleasant feelings. These responses were typically short lists of adjectives (happy, excited, good, etc.). Three participants gave responses reflecting self-affirmation (e.g. “I was proud”) in response to the first prompt, and seven gave responses of self-affirmation for the second prompt (e.g. “It (my art) makes me feel like I’m very gifted.”) Only two participants said that they associated unpleasant feelings with working on an artistic piece, and those participants were referring to the feelings that fueled their artistic decisions. One participant said, “I was mad. I was in a wheelchair and I can’t talk. That’s what it (the piece) was about.”

*“It (my art) makes me feel like I’m very gifted.”*

Prompt #5: *Do you see yourself as an artist? Tell me about how it makes you feel to be an artist.*

Twenty-seven individuals, 11 arts participants at Matheny and 16 at Hattie Larlham responded to this item. Responses were sorted into five categories, four of which were constructed *a priori*: (1) those reflecting pleasant feelings; (2) those reflecting self-affirmation; (3) those reflecting unpleasant feelings; (4) responses in which the participant does not view him/herself as an artist; and (5) responses in which the individual expressed mixed pleasant and unpleasant feelings (added during analysis). Response breakdowns by category are presented in Table 7.

In response to this prompt, two individuals said that they do not see themselves as artists. One clarified, “Outside the studio, I don’t see myself as an artist.” A majority of the

others responded much as they did to prompts #4a and #4b indicating that they associate pleasant feelings with their identities as artists. The responses of three individuals reflected mixed positive and negative feelings. One indicated feeling proud, fulfilled, scared and tired.

Prompt #6: *Do you think becoming an artist has changed you? Made you different? How?*

Twenty-six individuals, 12 arts participants at Matheny and 14 at Hattie Larlham responded to this item. Responses were sorted into five categories, four of those having been constructed before analyses: (1) responses reflecting increased creativity and awareness; (2) responses reflecting increased happiness; (3) responses reflecting increased positive self-regard; (4) responses reflecting increased life opportunities (added during analysis); and (5) responses in which participants expressed no change associated with their participation in the arts. Response breakdowns by category are presented in Table 8.

Of the above categories, the last one (i.e. in which participants expressed no change)

*“I love the fact that I get to be whatever I want; an artist, a writer, it gives me more options to be who I am. Being an artist makes me want more to do the best I can.”*

had the highest numbers of responses coded into it.

A relatively large proportion of individuals felt that they had not changed as a result of incorporating the role of “artist” into their identities. One expressed, “I always had an artist mentality, just never had a chance to express it before.” There were, however, 14 individuals who did indeed feel somehow changed. Six felt that they now had

increased creativity and ability to express themselves (“It makes me view the world differently all the time.”) Three felt an increased sense of happiness, and three expressed higher self-regard. Consonant with two responses to prompt #3, three individuals felt that the arts provided increased life options. One responded, “I love the fact that I get to be whatever I want; an artist, a writer, it gives me more options to be who I am. Being an artist makes me want more to do the best I can.”

## **Discussion**

Comprised of pre-experimental, correlational, and qualitative components, this study was intended to provide preliminary data to guide the development of larger evidence-based trials. Specifically, the study was conducted to provide evidence regarding the relative value of the constructs “self-determination” and “locus of control” in studying the impact of fine arts participation for persons with complex developmental disabilities.

Interpretation of the study’s results should be done with recognition of the study’s intent and of the limitations of the design. With regard to internal validity of the quantitative components, the static group comparison design limited our ability to understand any pre-existing differences between the groups that might have impacted on individuals’ responses to items on the instruments. Further, a within-subjects component to investigate change over time in the variables of interest might have been fruitful, rather than relying on a between group comparison in which a number of variables of interest could not be controlled due to lack of historical program involvement data or due to lack of sufficient sample size. Finally, given the degree to which many participants of this study have considerable cognitive disability, expressive communication deficits, or issues of fatigue associated with their physical disabilities, the reliability of the data, particularly those obtained through the ANSIE and the ARC-SDS(PE) are questionable (although the strong correlation between scores on the two instruments does suggest some psychometric value and consistency).

An interesting question concerns the degree to which the constructs of interest, those of self-determination and locus of control, are sufficiently malleable in response to experience to have been reasonably expected to change as a result of participation in the arts. As noted earlier, studies have found some support for the idea that self-determination in children with intellectual disability can be enhanced through experience (Wehmeyer, Palmer, Shogren, Williams-Diehm & Soukup, 2013). The notion that locus of control can be altered is somewhat more tentative. While there have been some studies in which locus of control was studied as an outcome variable (see for example Hans, 2000; Smith, 1970), locus of control is generally thought of as a disposition; a relatively stable personality characteristic (Specht, Egloff & Schmukle, 2011, 2013; Cobb-Clark & Schurer, 2013).

Perhaps one's locus of control is not sufficiently malleable to have demonstrated a response to engagement in artistic endeavors.

Existing quantitative measures of self-determination and of locus of control might not be sufficiently sensitive to detect change that seemed to be apparent in some of the qualitative responses. Those scales are intended to assess their respective constructs in a global fashion. They address broad attributional tendencies. It may be that the impacts of arts participation, rather than being reflected in a global way, are felt in more specific life domains: career outlook, sense of self-efficacy in communication, etc. For example, a number of qualitative responses of arts participants to prompt #1 ("... What kinds of things do you think happen to you because of luck?") generally centered around "lucky" opportunities to move themselves forward through their own effort. Those kinds of responses reflecting "lucky" opportunities to exercise one's will and one's competence were not seen among the non-arts participants.

It might be that tendencies to respond in ways that de-emphasize luck in favor of effort and ambition reflect differences between the arts and non-arts participants that are not attributable to arts participation. In fact, it might be those differences that steered the arts participants toward the arts in the first place. A sense of self-determination and/or internal locus of control might have been one factor that determined membership in the arts participant versus non-participant groups. As such, future research in which self-determination and locus of control are measured prior to engagement in the arts as well as after, to the extent that such research is possible, might help us understand the directionality of any relationship that is found.

In conclusion, our preliminary trial underscores the need for and ability to successfully perform quantitative and qualitative assessments of individuals with a range of cognitive functioning with regard to their abilities and display of creative attributes. As expected from a group of individuals with such broad variability in their magnitude of disability, some findings are conflicting, whereas others are informative with respect to the possible impact of a creative arts program. The suggestion that fine arts participants, relative to non-participants, being more likely to de-emphasize "luck" in favor of effort and ambition in attributions about their circumstances and accomplishments is very interesting and provides a foundation for next steps investigation.



### References

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Boyle, C.A., Boulet, S., Schieve, L., Cohen, R.A., Blumberg, S.J., Yeargin-Allsopp, M., Visser, S., Kogan, M.D. (2011). Trends in the Prevalence of Developmental Disabilities in US Children, 1997–2008. *Pediatrics*, 27, 1034-1042.
- Cobb-Clark, D.A & Schurer, S. (2013). Two economists' musings on the stability of locus of control. *Economic Journal*, 123(570), 358-400.
- Courtney-Long, E.A., Carroll, D.D., Zhang, Q., Stevens, A.C., Griffin-Blake, S., Armour, B.S. & Campbell, V.A. (2015). Prevalence of Disability and Disability Type among Adults, United States – 2013. *Morbidity and Mortality Weekly Report*, 64, 777-783.
- Gutman, L.M. & Schoon, I. (2013). The impact of non-cognitive skills on outcomes for young people: Literature review. London: Education Endowment Foundation. Available at <http://hdl.voced.edu.au/10707/287500>. Accessed August 20, 2015.
- Hans, T. A. (2000). A meta-analysis of the effects of adventure programming on locus of control. *Journal of contemporary psychotherapy*, 30(1), 33-60.
- Hsieh, H-F. & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.
- IBM Corp. (2013). IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.
- Mason, C., Steedly, K. & Thorman, M. (2008). Impact of arts integration on voice, choice, and access. *Teacher Education & Special Education* 31(1), 36-46

- Mayring, P. (2000). Qualitative content analysis. *Forum: Qualitative Social Research*, 1(2). Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/view/1089/2385>.
- Nowicki, S. & Duke, M. (1974). A Locus of Control scale for college as well as non-college adults. *Journal of Personality Assessment*, 38, 136-137.
- Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80(1) (Whole No. 609).
- Shogren, K.A., Wehmeyer, M.L., Palmer, S.B., Rifenbark, G.G. & Little, T.D. (2015). Relationships between self-determination and postschool outcomes for youth with disabilities. *The Journal of Special Education*, 48(4), 256-267.
- Smith, R.E. (1970). Changes in locus of control as a function of life crisis resolution. *Journal of Abnormal Psychology*, 75(3), 329-332.
- Specht, J., Egloff, B. & Schmukle, S.C. (2011). Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order stability of the big five. *Journal of Personality and Social Psychology*, 101(4), 862-882.
- Specht, J., Egloff, B., Schmukle, S.C. (2013). Everything under control? The effects of age, gender, and education on trajectories of perceived control in a nationally representative German sample. *Developmental Psychology*, 49(2), 353-364.
- Wehmeyer, M.L. (1995). *The Arc's Self-Determination Scale: Procedural guidelines*. Arlington, TX: The Arc of the United States.
- Wehmeyer, M.L., & Kelchner, K. (1995). *The Arc's self-determination scale*. Arlington, TX: The Arc National Headquarters.
- Wehmeyer, M.L. & Palmer, S.B. (1997). Perceptions of control of students with and without cognitive disabilities. *Psychological Reports*, 81, 195-206.
- Wehmeyer, M.L., Palmer, S.B., Shogren, K., Williams-Diehm, K., & Soukup, J.H. (2013). Establishing a causal relationship between intervention to promote self-determination and enhanced student self-determination. *The Journal of Special Education*, 46(4), 195-210.
- Wehmeyer, M.L. & Schwartz, M. (1997). Self-determination and positive adult outcomes: A follow-up study of youth with mental retardation or learning disabilities. *Exceptional Children*, 63(2), 245-255.

## Appendix

**Table 1:** Results of quantitative analyses.

<b>Relationship studied</b>	<b>n</b>	<b>Result</b>
<b>ARC-SD(PE) scores and ANSIE scores</b>	42	r = -0.638, p<.001
<b>ARC-SD(PE) scores and level of participation in the arts</b>	High users - 11 Low users - 14 Non-users - 8	H=.731, p=ns
<b>ANSIE scores and level of participation in the arts</b>	High users - 11 Low users - 14 Non-users - 8	H=.123, p=ns
<b>ARC-SD(PE) scores and months in arts programming</b>	16	rs=0.104, p=ns
<b>ANSIE scores and months in arts programming</b>	16	rs=0.416, p=ns

**Table 2:** Numbers of responses and representative responses for categories associated with Prompt #1.

Do you know what I mean when I say “luck” or that someone is “lucky”? Sometimes people feel like what happens to them is because of luck, and sometimes people feel like what happens to them is because they’ve worked at it and made it happen. What kinds of things do you think happen to you because of luck? (n=18)

<b>Category</b>	<b>Initial versus added category</b>	<b>High users *</b>	<b>Low users *</b>	<b>Non-users *</b>	<b>Representative Response</b>
<b>Responses that reflect lucky opportunities</b>	Initial	1	6	1	When I finish a poem or piece of art, it’s work and luck together. It’s luck that I got the opportunity.
<b>Responses that reflect lucky outcomes</b>	Initial	0	4	3	I overcame certain surgeries in my life, and I won a contest – received tickets for a vacation.
<b>Responses that reflect lack of belief in luck</b>	Initial	0	2	0	I don’t think anything happens to me because of luck. Everything I’ve wanted to obtain was because of hard work, dedication and motivation.
<b>Responses that reflect intervention of higher power</b>	Added	0	0	1	I don’t believe in luck. I believe in faith. When God wants something to happen, it will happen.

\* High users engage in formal arts programming more than 1 hour per week.  
 Low users engage in formal arts programming 1 hour per week or less.



**Table 3:** Numbers of responses and representative responses for categories associated with Prompt #2.

Tell me about something that you made happen. What do you think you did to make that happen? (n=20)

Category	Initial versus added category	High users*	Low users*	Non-users*	Representative Response
<b>Extra-Institutional</b>					
<b>Responses concerning occupational/financial independence</b>	Initial	1	3	1	My social worker and I made DVR (vocational rehabilitation) training happen.
<b>Responses concerning recreation and sports</b>	Added	0	0	1	When I made it to the Nationals team at Special Olympics.
<b>Responses concerning family/relationships</b>	Initial	0	0	0	(None)
<b>Responses concerning socially conscious acts</b>	Added	0	0	1	I donated hair to “Locks of Love.” I’m strongly about helping others beside myself.

Table 2. continued on next page)

(Table 3. continued)

Category	Initial versus added category	High users*	Low users*	Non-users*	Representative Response
<b><u>Intra-Institutional</u></b>					
Responses concerning occupational activities	Initial	0	0	0	(None)
Responses concerning scholastic activities	Added	1	0	0	I just finished (writing) a paper about dietary needs for people with disabilities.
Responses concerning recreational activities	Initial	0	1	0	I moved up in Karate – I did a kick!
Responses concerning daily functioning and self care	Added	0	3	4	Wound healing. I listened to the medical staff and followed their directions to heal my wounds.
Responses concerning creative work without stated occupational or recreational intent	Added	0	3	1	I’m writing a book. Hard work and determination are making it happen.

\* High users engage in formal arts programming more than 1 hour per week.  
 Low users engage in formal arts programming 1 hour per week or less.

Table 4: Numbers of responses and representative responses for categories associated with Prompt #3.

Thinking about the future, are there things that you want to accomplish? Tell me about them. (n=18)

Category	Initial versus added category	High users*	Low users*	Non-users*	Representative Response
<b>Extra-Institutional</b>					
Responses concerning occupational/financial Independence	Initial	1	5	4	Maybe go back to school; for what I don't know.
Responses concerning recreational activities	Initial	0	2	0	I would like to travel again.
Responses concerning family/relationships	Initial	1	2	3	I want to have a wife and child.
<b>Intra-Institutional</b>					
Responses concerning occupational activities within the service provider context	Initial	0	0	0	(None)
Responses concerning recreational activities within the service provider context	Initial	0	0	0	(None)

\* High users engage in formal arts programming more than 1 hour per week.  
 Low users engage in formal arts programming 1 hour per week or less.

**Table 5:** Numbers of responses and representative responses for categories associated with Prompt #4a.

I'd like to talk with you about a recent piece (painting, sculpture, etc.) that you've done. Can you think of one that is important to you? I'd like to know what it was like for you when you were working on that piece. (n=28)

<b>Category</b>	<b>Initial versus added category</b>	<b>High users*</b>	<b>Low users*</b>	<b>Representative Response</b>
<b>Responses reflecting general pleasant feelings (joy, happiness, etc.)</b>	Initial	11	12	Good, happy, excited.
<b>Responses reflecting self-affirmation</b>	Initial	2	1	Positive - I was proud.
<b>Responses reflecting unpleasant feelings (sadness, anger, etc.)</b>	Initial	2	0	I was mad. I was in a wheelchair and I can't talk. That's what it (the artistic piece) was about.

\* High users engage in formal arts programming more than 1 hour per week.  
 Low users engage in formal arts programming 1 hour per week or less.

**Table 6:** Numbers of responses and representative responses for categories associated with Prompt #4b.

How did you feel when it was finished? (n=27)

<b>Category</b>	<b>Initial versus added category</b>	<b>High users*</b>	<b>Low users*</b>	<b>Representative Response</b>
<b>Responses reflecting general pleasant feelings (joy, happiness, etc.)</b>	Initial	11	10	Happy – excited when finished.
<b>Responses reflecting self-affirmation</b>	Initial	4	3	It makes me feel like I’m very gifted.
<b>Responses reflecting unpleasant feelings (sadness, anger, etc.)</b>	Initial	0	0	(None)

\* High users engage in formal arts programming more than 1 hour per week.  
 Low users engage in formal arts programming 1 hour per week or less.

**Table 7:** Numbers of responses and representative responses for categories associated with Prompt #5.

Do you see yourself as an artist? Tell me about how it makes you feel to be an artist. (n=27)

<b>Category</b>	<b>Initial versus added category</b>	<b>High users*</b>	<b>Low users*</b>	<b>Representative Response</b>
<b>Responses reflecting general pleasant feelings (joy, happiness, etc.)</b>	Initial	10	8	Positive when I feel like an artist; hopeful.
<b>Responses reflecting self-affirmation</b>	Initial	0	2	Makes me feel good, awesome, capable of doing things. I value myself. Intelligent.
<b>Responses reflecting unpleasant feelings (sadness, anger, etc.)</b>	Initial	1	1	It's very stressful because I'm a perfectionist.
<b>Responses reflecting mixed pleasant and unpleasant feelings</b>	Added	2	1	Proud, fulfilled, scared and tired.
<b>Responses in which participant did not see him/herself as an artist</b>	Initial	2	0	Outside the studio I don't see myself as an artist.

\* High users engage in formal arts programming more than 1 hour per week.  
 Low users engage in formal arts programming 1 hour per week or less.

**Table 8:** Numbers of responses and representative responses for categories associated with Prompt #6.

Do you think becoming an artist has changed you? Made you different? How? (n=26)

<b>Category</b>	<b>Initial versus added category</b>	<b>High users*</b>	<b>Low users*</b>	<b>Representative Response</b>
<b>Responses reflecting increased creativity and expression</b>	Initial	2	4	Makes me view the world differently all the time.
<b>Responses reflecting increased happiness</b>	Initial	3	0	(Changed) in a positive way; happy, joyful, hopeful.
<b>Responses reflecting higher self-regard</b>	Initial	2	1	It has caused me to come out of my disabilities and not feel sorry for myself.
<b>Responses reflecting increased life options</b>	Added	0	3	I have a life now full of big dreams and big goals. Being an artist made me know I can set goals and go for them.
<b>No change</b>	Initial	8	3	I always had an artist mentality, just never had a chance to express it before.

\* High users engage in formal arts programming more than 1 hour per week.  
 Low users engage in formal arts programming 1 hour per week or less.